U.S. Coast Goard Oceanographic Report

UNITED STATES COAST GUARD

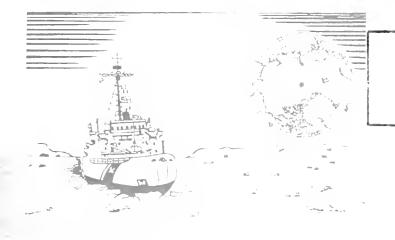
OCEANOGRAPHIC REPORT No. 40

CG 373-40

Woods Tole Oceanagraphic institution ATLAS - GAZETTEER COLLECTION

OCEANOGRAPHIC INVESTIGATIONS
IN THE
NORTHERN BERING SEA AND BERING STRAIT

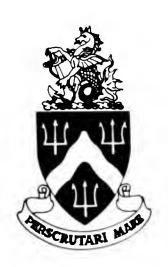
June-July 1968



PLEASE PETURN
TO
UNION DISTRICT
MCLEAR

GC 3.7 113 14.40 --Atlas -532-AA -CG-373-40

UNITED STATES COAST GUARD OCEANOGRAPHIC



REPORT No. 40 CG 373-40

OCEANOGRAPHIC INVESTIGATIONS
IN THE
NORTHERN BERING SEA AND BERING STRAIT

June-July 1968



By David M. Husby

WASHINGTON, D.C.





ABSTRACT

Oceanographic data collected on 79 stations in the northern Bering Sea and Bering Strait during 8–19 July 1968 are presented and interpreted. The data include observations of temperature, salinity, dissolved oxygen, and current velocity made at 5-meter intervals from sea surface to the bottom. Contoured sections of the data are also presented.

Editor's note: Reference to a product or comment with respect to it in this publication does not indicate, or permit any person to hold out by republication in whole or in part or otherwise, that the product has been endorsed, authorized, or approved by the Coast Guard.



TABLE OF CONTENTS

Title Page	
Abstract	
Table of Contents	
List of Illustrations	
Introduction	
Data Collection and Processing	
Cruise Chronology	
Anchored Instrument Packages	
Direct Measurements of Current	on Station
Time-Series Current Measuremen	nts
Oceanographic Stations	
Suspended Sediment Study	
Results	
Water Masses	
Currents	
Dissolved Oxygen Distribution	
References	
Illustrations	
Appendix A—Oceanographic Data	

LIST OF ILLUSTRATIONS

Figu	ire	Page
1.	Location of anchored sensing systems and oceanographic stations	5
	Configuration of anchored instrument packages	6
	Vertical distribution of temperature on section H-H', 8-11 July 1968	7
	Vertical distribution of temperature on section G-G', 11-12 July 1968	7
	Vertical distribution of temperature on section F-F', 13-14 July 1968	8
	Vertical distribution of temperature on section E-E', 15-16 July 1968	8
	Vertical distribution of temperature on section D-D', 17-18 July 1968	9
	Vertical distribution of temperature on section C-C', 18-19 July 1968	9
	Vertical distribution of salinity on section H-H', 8-11 July 1968	10
	Vertical distribution of salinity on section G-G', 11-12 July 1968	10
	Vertical distribution of salinity on section F-F', 13-14 July 1968	11
	Vertical distribution of salinity on section E-E' 15-16 July 1968	11
	Vertical distribution of salinity on section D-D', 17-18 July 1968	12
	Vertical distribution of salinity on section C-C', 18-19 July 1968	12
	Horizontal distribution of sea surface temperature between section H-H	
	and section C-C', 8-19 July 1968	13

T31		Page
Figu	nte —	*6
	Horizontal distribution of surface salinity between section H-H' and section C-C', 8-19 July 1968	1
	Horizontal distribution of temperature at a depth of 20 meters between section H–H′ and section C–C′, 8–19 July 1968	1
18.	Horizontal distribution of salinity at a depth of 20 meters between section H-H' and section C-C', 8-19 July 1968	1
19.	Current velocity at depth of 5 meters at oceanographic stations taken 8-19 July 1968	1
20.	Current velocity at depth of 20 meters at oceanographic stations taken 8-19 July 1968	
21.	Vertical distribution of dissolved oxygen on section H-H', 8-11 July 1968	
22.	Vertical distribution of dissolved oxygen on section G-G' 11-12 July 1968	
23.	Vertical distribution of dissolved oxygen on section F-F', 13-14 July 1968	
24.	Vertical distribution of dissolved oxygen on section E-E', 15-16 July 1968	
25.	Vertical distribution of dissolved oxygen on section D-D', 17-18 July 1968	
26.	Vertical distribution of dissolved oxygen on section C-C', 18-19 July	

Oceanographic Investigations in the Northern Bering Sea and Bering Strait

June-July 1968

David M. Husby 1

INTRODUCTION

Results of past investigations in the Bering Sea and Bering Strait (Aagaard, 1964; Coachman and Aagaard, 1966; Coachman and Rankin, 1968; Husby, 1969) have shown four problem areas: (1) turbulent mixing and transfer processes, (2) time-dependence of the velocity field, (3) the role of atmospheric circulation in driving or modifying oceanic circulation, and (4) general physical oceanography of the northern Bering Sea. A cooperative cruise with the U.S. Coast Guard Oceanographic Unit and University of Washington was conducted on the USCGC STATEN ISLAND (WAGB-278) during June-July 1968 to investigate the general physical oceanography of the northern Bering Sea and Bering Strait, current flow through the Bering Strait, and transport of suspended sediments by currents.

	DATA COLLECTION	AND	PROCESSING
Cruise C	hronology	19 July	•
1968 25 June	Departed Kodiak, Alaska en route to north- ern Bering Sea.		occupied stations 56-58, to verify the strong (180 cm/sec) current and marked temperature inversions. Initiated search
1 July	Moored current meter arrays and tempera- ture-pressure recorders at 64°00'N, 171° 55'W and 65°37.9'N, 168°30'W.		for current meter array originally moored at 65°37.9′N, 168°30′W.
4 July	Moored temperature-pressure recorder at 65°00'N, 170°20'W. Vessel anchored nearby for period of 26 hours while hourly current meter lowerings and two-hourly Nan-	20 July	Continued search for current meter array with no success. Abandoned search and proceeded to Norton Sound to begin a study of suspended sediments.
	sen casts made for time-series study.	21 July	Completed suspended sediment study and en route Nome, Alaska.
6 July	Vessel anchored at 63°20'N, 168°29'W for 30 hours for time-series observations.	22 July	
9 July	Completed third time-series study at 64° 00'N, 172°00'W with total of 31 hours spent on this station. Arrived at first oceanographic station at 2100 hours (GMT).		the exception of Mr. P. Joppa who remained aboard to assist in search for anchored instrument packages. Instruments anchored at 65°37.9'N, 168°20'W never located; one of orange surface floats
16 July	Completed station number 55, but then operations halted due to fog and reports of heavy concentrations of Soviet vessels in		was observed in fisherman's boat. Temperature-pressure recorder anchored at 65°00'N, 170°20'W was retrieved.
	the western channel of the Bering Strait.	23 July	
17 July	Survey resumed at 1000 hours on station 56.		were located but lost during retrieval.

¹ U.S. Coast Guard Oceanographic Unit, Washington, D.C. Present Address: Oceanography Department, University of Washington, Seattle, Washington.

Anchored Instrument Packages

To determine the tidal wave pattern in the northern Bering Sea and to continuously monitor the flow through the Bering Strait, three instrument arrays were anchored (fig. 1). The basic configuration of the arrays is shown in figure 2. At the 64 00'N, 171°55'W location, the instrument array was placed at a depth of approximately 28 meters in water depth of 48 meters. The second instrument array, anchored at 65 37.9'N, 168 30.2'W in 55 meters of water. was suspended at a depth of approximately 25 meters. The third, consisting of only a temperature-pressure recorder, was placed near the bottom in 40 meters of water at 65°00'N, 170°20'W. Unfortunately, neither of the current meters was retrieved and no useable data were obtained from the one temperature-pressure recorder which was retrieved.

Direct Measurements of Current on Station

At each of the 79 oceanographic stations, the ship was anchored and allowed to swing on the anchor until it achieved a fairly stable heading. A current meter was then lowered and raised through the water column stopping at 5-meter intervals to record current velocity for about 15 minutes. The deflection of the cable from the vertical was measured at each current reading along with the length of cable paid out to determine actual depth of the meter. The current meter used was the "Magnesyn" current meter, designed and built at the Department of Oceanography, University of Washington. It combined a Hydro Products Model 460 current speed sensor and Model 451 current speed readout module with a Marine Remote Compass system for measuring magnetic direction. The current velocity data are retained by the Department of Oceanography, University of Washington, for later transfer to the National Oceanographic Data Center, Washington, D.C. (NODC).

Time-Series Current Measurements

At three locations (fig. 1), the ship was anchored and hourly current meter lowerings were made over periods of 26, 30, and 31 hours to measure the time-dependent variation of the velocity field. Nansen bottle casts were made approximately every two hours to measure tem-

perature, salinity, and dissolved oxygen content at 5-meter intervals. The current and physical oceanographic data from these three stations are retained by the Department of Oceanography, University of Washington, for later transfer to NODC.

Oceanographic Stations

At each of the 79 oceanographic stations, a Nansen bottle east was accomplished by personnel from the U.S. Coast Guard Oceanographic Unit. Observations of temperature, salinity, and dissolved oxygen were made at 5-meter intervals from the surface to near the bottom. Water temperatures were measured by a pair of deep-sea reversing thermometers in each Nansen bottle. The salinities were determined using an inductive salinometer. Conductivity values obtained were converted to salinity by use of the International Oceanographic Tables published jointly by UNESCO and the National Institute of Oceanography of Great Britain (UNESCO, 1966). Methods of collecting and processing the temperature and salinity data essentially followed those outlined in H.O. Pub. 607 (U.S. Naval Oceanographic Office, 1968). Upon retrieval of each cast, water samples were drawn immediately for the determination of dissolved oxygen content. The method used was a modified Winkler determination involving the titration of a 50 ml aliquot of the treated sample with a 0.01 normal sodium thiosulfate solution using starch as the end point indicator. The temperature, salinity, and dissolved oxygen data were forwarded to NODC and are listed as Ref. No. 31–1270,

Suspended Sediment Study

To determine the transport of material of fluviatile origin through Norton Sound and the northern Bering Sea, Mr. Stephen Smyth (Univ. of Washington) conducted an investigation during the occupation of the 79 oceanographic stations. A Hydro Products Model 412T Towable One Meter Transmissometer was lowered into the water at 53 stations until contact was made with the bottom. Water depth and transmissivity were recorded on a strip chart recorder in the oceanographic laboratory. When the transmissometer recordings indicated unusual optical characteristics, water samples were obtained from the Nansen casts for later

analysis of suspended sediment concentration. A total of 62 transmissometer lowerings were accomplished and 142 water samples were collected.

During the Norton Sound operations on 21 July, four stations were occupied. At each station a Nansen bottle cast was made to obtain water samples at 5 meter intervals from the

surface to near the bottom, current speed and direction were measured at 5-meter intervals to near the bottom, a gravity core sample was obtained, a Van Veen grab sample was obtained, and a transmissometer lowering was accomplished. These data and samples are retained by the Department of Oceanography, University of Washington.

RESULTS

Water Masses

Hydrographic conditions in the northern Bering Sea and Bering Strait in July 1968 closely paralleled the summer regime observed in previous surveys, showing a relatively warm $(>5^{\circ}C)$, low salinity (<32.5%) water mass in the upper 10 meters and a layer of gradients between 10 and 15 meters overlying a colder $(<3^{\circ}C)$, more saline (>32.5%) water mass (figs. 3-14). Large zonal gradients of temperature and salinity were observed at the surface in the eastern portion of the survey area (figs. 15 and 16). The warm (>7.0 C), low salinity (<31.0%) water mass which extended along the Alaskan coast in the surface layer corresponded closely with the Alaskan Coastal Water (8-10°C, 20-30%) first defined by Saur, et al. (1954). The low salinity of this water mass is attributed to dilution by the effluents of the Yukon and Kuskokwim rivers. The isolated parcel of warm, low salinity water found at the surface northwest of St. Lawrence Island (figs. 15 and 16) may be the result of the advection of some river runoff through the Strait of Anadyr, possibly from the Anadyr River to the southwest.

The distribution of properties at 20 meters revealed two distinct deeper water masses (figs. 17 and 18). One, in the western half of the survey area, was characterized by a temperature range of 1.0 to 3.0°C and a salinity greater than 33.0%. This mass was definitely the Modified Shelf Water (1.0 to 4.0°C, 32.0 to 33.0%) described by Saur, et al. (1954) which usually has been found over the bottom in the northern Bering Sea in the late summer. The second water mass was found close to the northern coast of St. Lawrence Island and was characterized by temperatures less than 1.0°C and salinities between 32.7 and 32.8% (figs. 17 and 18). This water mass is the Deep Shelf Water,

described by Saur, et al. (1954) and Barnes and Thompson (1938) which attains its low temperatures from ice formation in the winter. The source of this water mass has been hypothesized to be the Gulf of Anadyr. The northeastward flow of water in the Strait of Anadyr observed in July 1968 would tend to confirm this hypothesis. Goodman, et al. (1942) reported an eddy of this water mass in the summers of 1937 and 1938 between St. Lawrence Island and St. Matthew Island with a temperature in the bottom water of -1.6°C. They suggested this water was a remnant of winter conditions when ice formation was occurring.

Currents

The current meter data were analyzed in an unpublished research paper (Grider, 1969) at the University of Washington. The direct measusements of currents on station were resolved into north and east components, which were averaged over two depth layers. The upper layer contained the average of all measured currents between the surface and the 10 meter depth; the lower layer averaged all measurements from 15 meters and deeper. The choice of those layers was based on the fact that the pycnocline in the northern Bering Sea is normally located between 10 and 15 meters in the summer.

Results of observations at the three timeseries current stations revealed semi-diurnal fluctuations in the current records which were of a tidal nature with a 12.4 hour period. This tidal species was then subtracted from the current records obtained at stations 1 to 28 which had obvious semi-diurnal oscillations. The current records for stations 29 through 76 were not corrected because there were no obvious periodic fluctuations and the time difference between the occupation of these stations and the first time-series current station was too large. Transport calculations were then made for the lines of stations and the most interesting result of those calculations was the net southward transport of 0.1 Sv (Sverdrup= 10⁶m³/sec) through section G-G'. This section was occupied during a period of average wind speed of 18 knots from the north. A southerly transport had been observed in this area only once before, in July 1967, aboard the CGC NORTHWIND. The net transport through section D-D' and C-C', 1.6 Sv to the north, showed good correlation with the net transport through section H-H', 1.7 Sv to the north. The current regime in the Bering Strait showed the usual summer conditions of greatest flow in the eastern half of the Strait. The highest speed, 180 cm/sec (3.6 knots), was measured in the lower layer at station 56 (figs. 19 and 20).

There was good correlation between the net

transport through the four southernmost sections computed from the current meter data and the average wind components normal to each section. However, Grider stated that the wind probably does not have a casual effect on the change in net transport, but is more symptomatic of atmospheric pressure zones which exert pressure differentials on the sea surface over a large distance.

Dissolved Oxygen Distribution

Measurements of dissolved oxygen concentrations revealed that the surface layer in the entire survey area was supersaturated or nearly supersaturated with oxygen at the temperatures which were observed. The Modified Shelf Water and Deep Shelf Water masses were about 90% saturated, indicating recent contact with the surface and low oxygen utilization.

REFERENCES

- Aagaard, K. (1964). Features of the physical oceanography of the Chukchi Sea in the autumn, M. S. thesis. Univ. Washington, Dept. of Oceanography, 44 pp.
- Barnes, C. S. and T. G. Thompson (1938). Physical and Chemical Investigations in the Bering Sea and portions of the North Pacific Ocean. Univ. Washington Publ. Oceanog., 3(2), 35-79 and appen.
- Coachman, L. K. and K. Aagaard (1966). On the water exchange through Bering Strait, Limol. and Ocean, 11, 44-59.
- Coachman, L. K. and D. A. Rankin (1968). Currents in Long Strait, Arctic Ocean, Artic, 21(1), 27-38.
- Goodman, J. R., J. H. Lincoln, T. G. Thompson, and F. A. Zeusler (1942). Physical and Chemical investigations: Bering Sea, Bering Strait, Chukchi Sea during the summers of 1937 and 1938. Univ. Washington Publ. Oceanog., 3(4), 105 pp.

- Grider, G. W., Jr. (1969). The current and hydrographic regime of the northern Bering Sea and Bering Strait, July 1968 (Unpublished). Univ. Washington, Dept. of Oceanography, 15 pp.
- Husby, D. M. (1969). Report of Oceanographic cruise, USCGC NORTHWIND, northern Bering Sea-Bering Strait-Chukchi Sea, July 1967, U.S. Coast Guard Oceanographic Report No. 24, CG-373-24.
- Saur, J. F. T., J. P. Tully, and E. C. LaFond (1954). Oceanographic cruise to the Bering and Chukchi seas, summer 1949. Part IV: Physical oceanographic studies V. 2. Descriptive report. U.S.N. Electron. Lab. Res. Rept. 416, 31 pp.
- UNESCO (1966). International Oceanographic Tables, UNESCO Office of Oceanography, Paris, 118 pp.
- U.S. Naval Oceanographic Office (1968). Instruction Manual for Oceanographic Observations, 3rd Edition. Pub. No. 607.

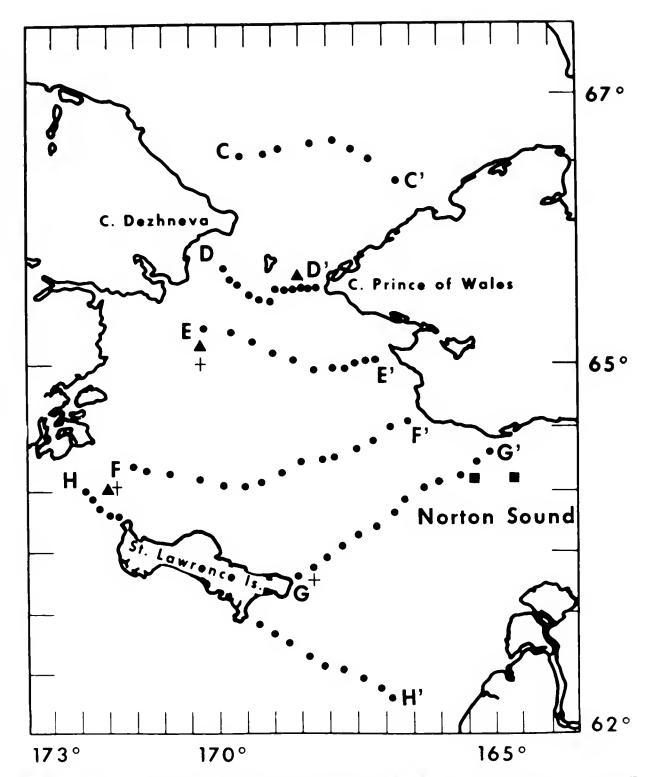


Figure 1. Location of anchored sensing systems and oceanographic stations occupied by USCGC STATEN ISLAND, 1-21 July 1968. ●=oceanographic stations, ▲=anchored instrument package, +=time-series current station, =Norton Sound station.



1000 METERS OF CABLE

-650 LB. RAILROAD WHEEL

-5/32" STEEL WIRE

200 LBS OF CHAIN

Figure 2. Configuration of current meter and pressure-temperature recorder arrays anchored by USCGC STATEN ISLAND in Bering Strait and Strait of Anadyr, 30 June-1 July 1968.

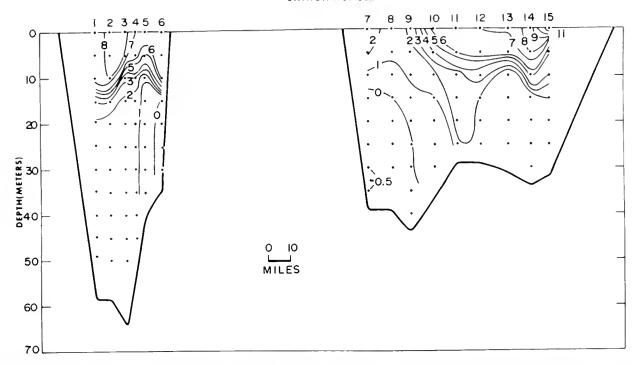


Figure 3. Distribution of temperature (°C) along section II-II', from USCGC STATEN ISLAND 8-11 July 1968.

Contour interval I.0°C except for —0.5°C contour.

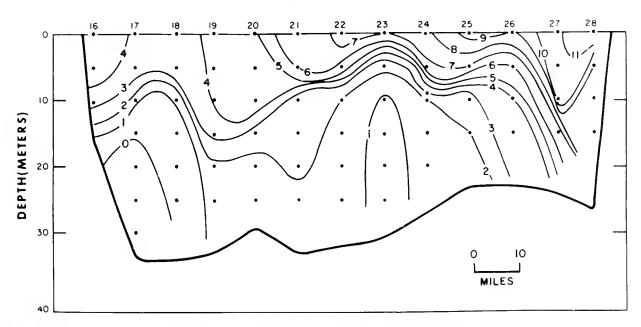


Figure 4. Distribution of temperature (°C) along section G-G', from USCGC STATEN ISLAND 11-12 July 1968.

Contour interval 1.0°C.

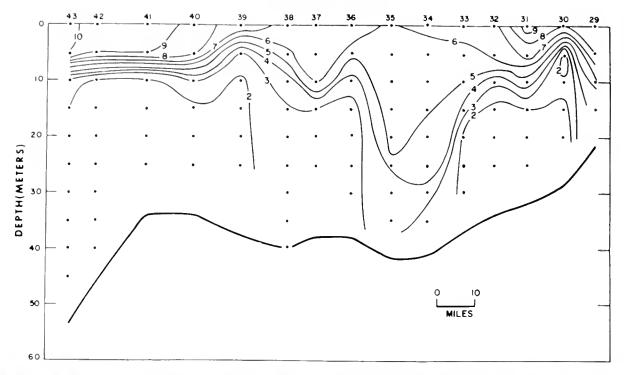


Figure 5. Distribution of temperature (°C) along section F-F', from USCGC STATEN ISLAND data of 13-14 July 1968. Contour interval 1.0°C.



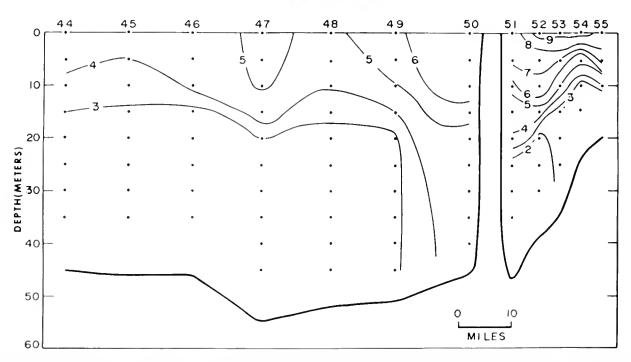


Figure 6. Distribution of temperature (°C) along section E-E', from USCGC STATEN ISLAND data of 15-16 July 1968, Contour interval 1.0°C.

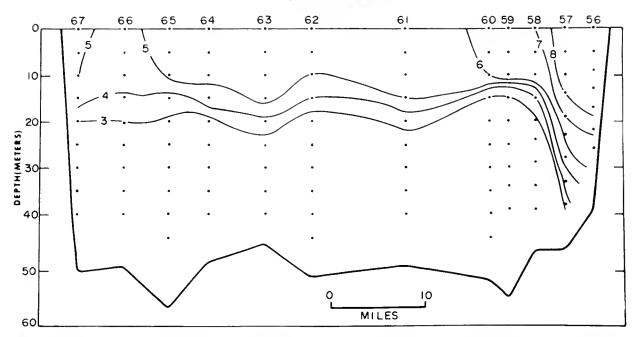


Figure 7. Distribution of temperature (°C) along section D-D', from USCGC STATEN ISLAND data of 17-18 July 1968. Contour interval 1.0°C.

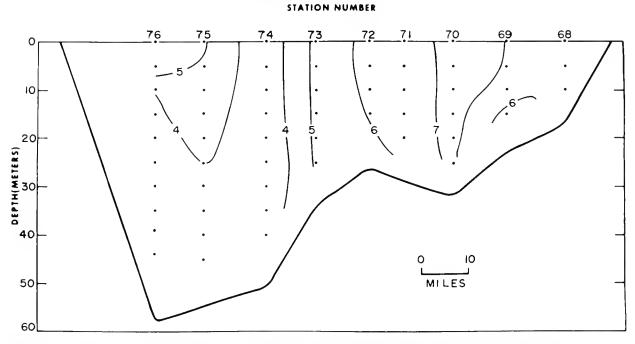


Figure 8. Distribution of temperature (°C) along section C-C', from USCGC STATEN ISLAND data of 18-19 July 1968, Contour interval 1.0°C.

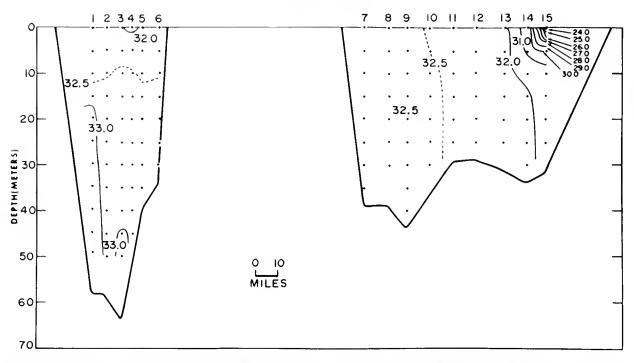


Figure 9. Distribution of salinity (‰) along section H-H', from USCGC STATEN ISLAND data of 8-11 July 1968.

Contour interval 0.5‰, except for 24.0-32.0‰ contours.

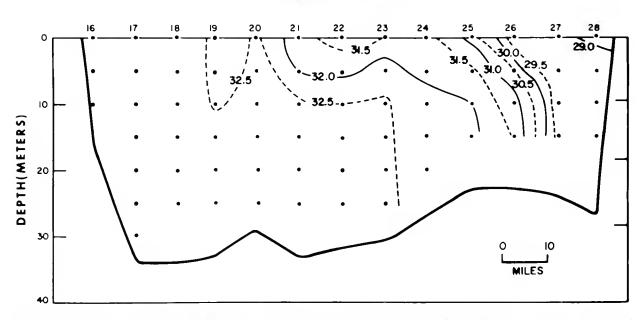


Figure 10. Distribution of salinity (%) along section G-G', from USCGC STATEN ISLAND data of 11-12 July 1968.

Contour interval 0.5%.

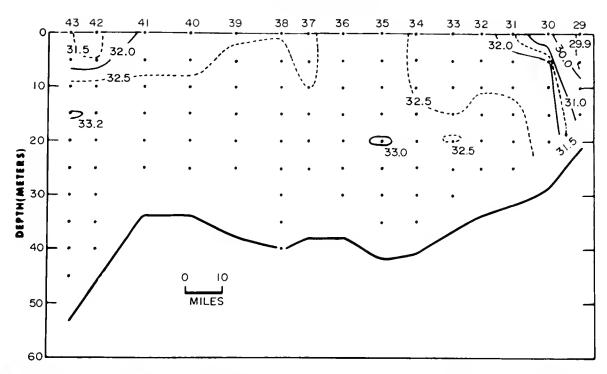


Figure 11. Distribution of salinity (%) along section F-F', from USCGC STATEN ISLAND data of 13-14 July 1968.

Contour interval 0.5%.



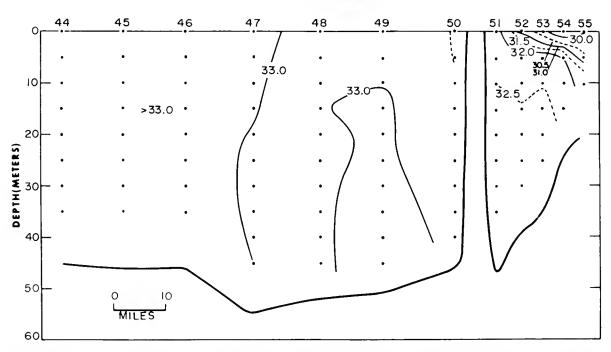


Figure 12. Distribution of salinity (%) along section E-E', from USCGC STATEN ISLAND data of 15-16 July 1968.

Contour interval 0.5%..

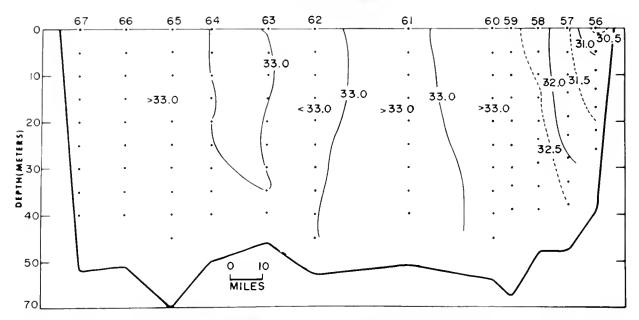
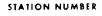


Figure 13. Distribution of salinity (%) along section D-D', from USCGC STATEN ISLAND data of 17-18 July 1968.

Contour interval 0.5%.



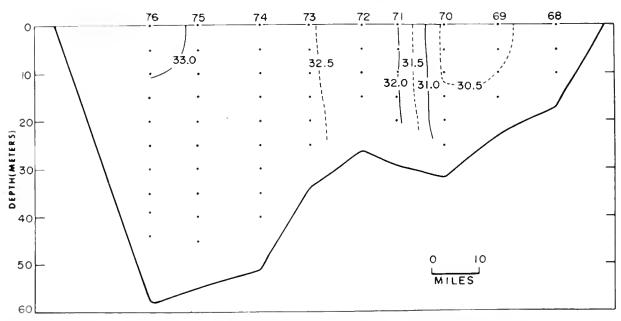


Figure 14. Distribution of salinity (%) along section C-C', from USCGC STATEN ISLAND data of 18-19 July 1968.

Contour interval 0.5%.

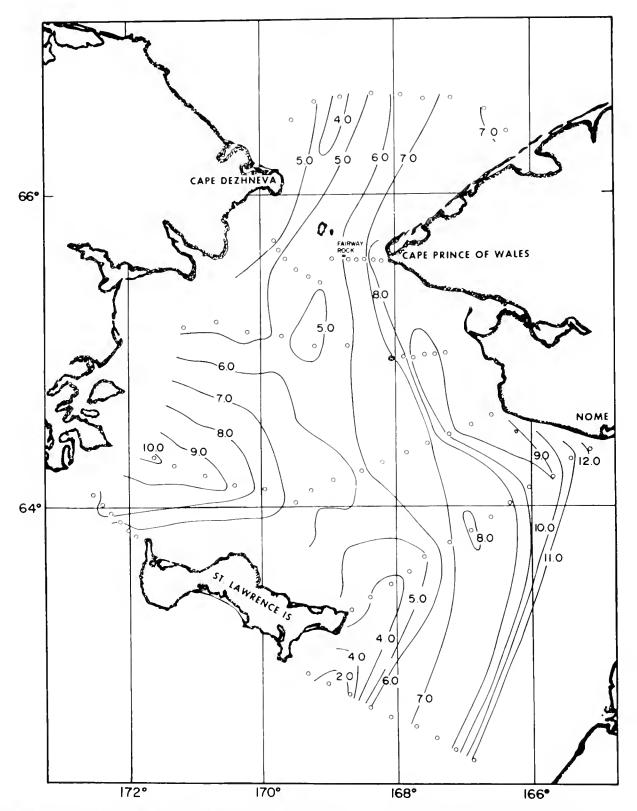


Figure 15. Horizontal distribution of sea surface temperature (°C) from USCGC STATEN ISLAND data of 8-19 July 1968.

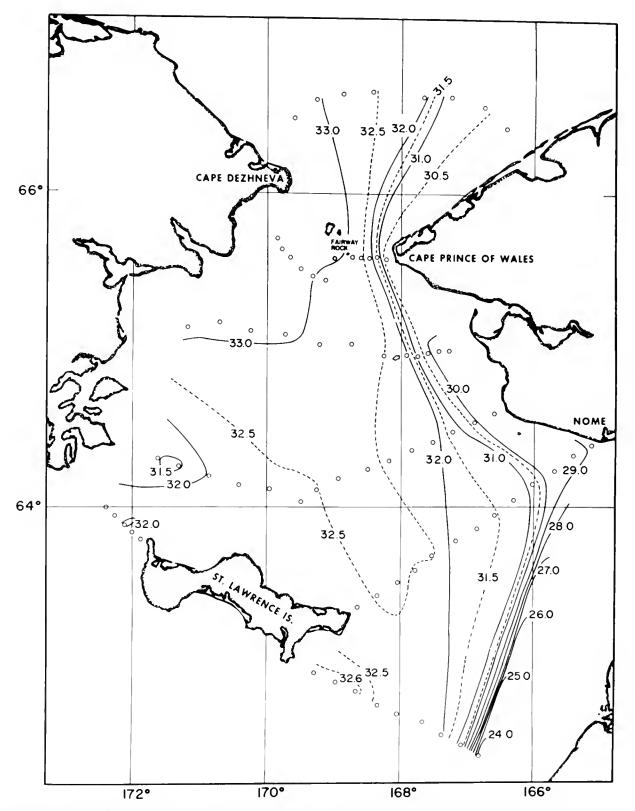


Figure 16, Horizontal distribution of surface salinity (%) from USCGC STATEN ISLAND data of 8-19 July 1968.

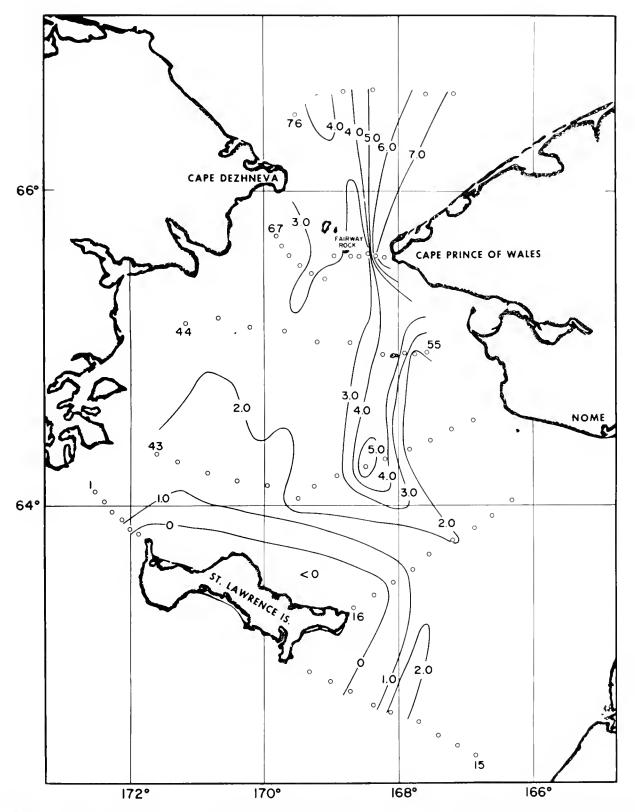


Figure 17. Horizontal distribution of temperature (°C) at depth of 20 meters from USCGC STATEN ISLAND data of 8-19 July 1968.

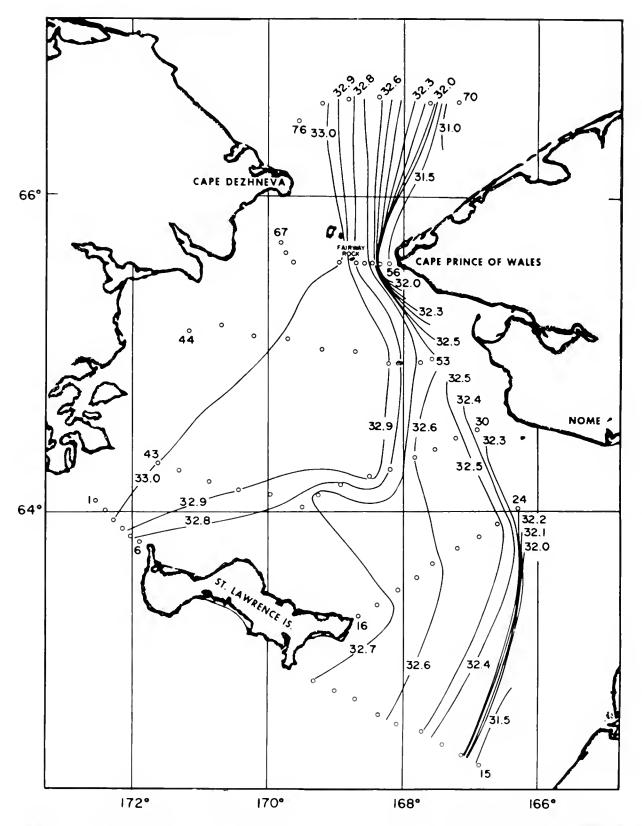


Figure 18. Horizontal distribution of salinity (%) at depth of 20 meters from USCGC STATEN ISLAND data of 8-19 July 1968.

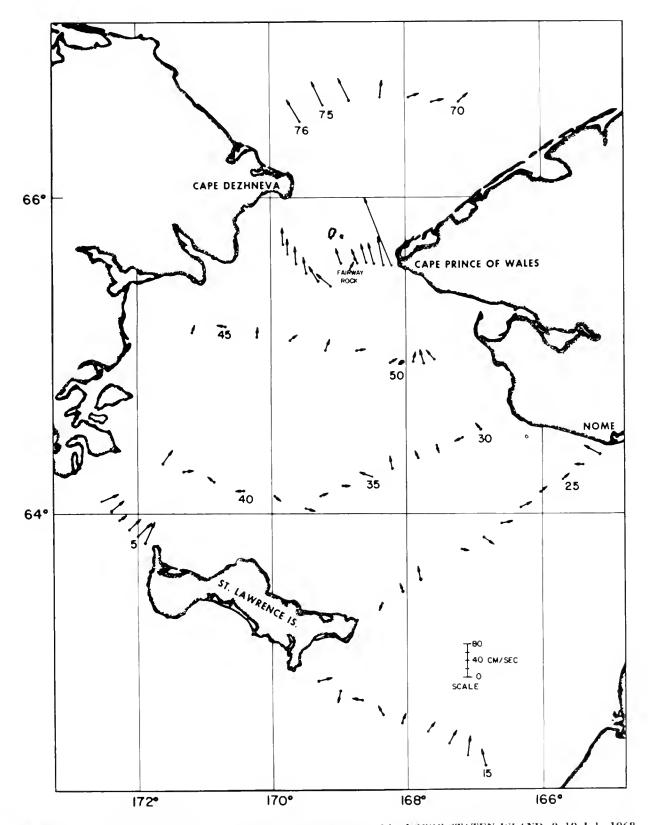


Figure 19, Current velocity at a depth of 5 meters at stations occupied by USCGC STATEN ISLAND, 8-19 July 1968.

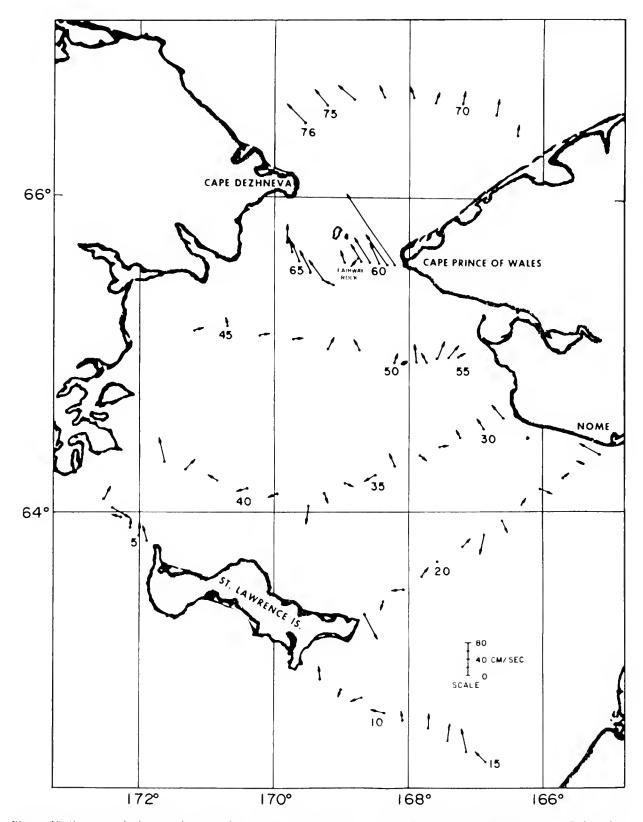


Figure 20. Current velocity at a depth of 20 meters at stations occupied by USCGC STATEN ISLAND, 8-19 July 1968.

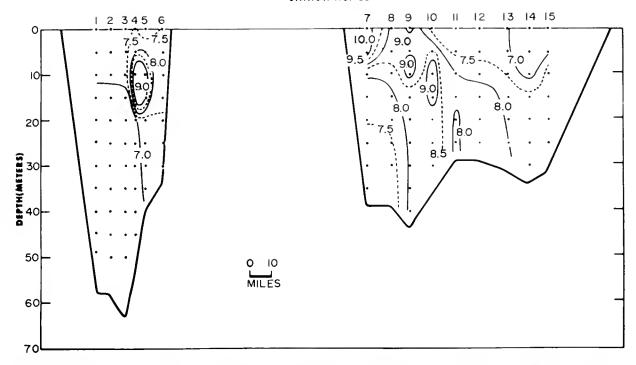


Figure 21. Distribution of dissolved oxygen (ml/l) along section II-II', from USCGC STATEN ISLAND data of 8-11 July 1968. Contour interval 0.5 ml/l.

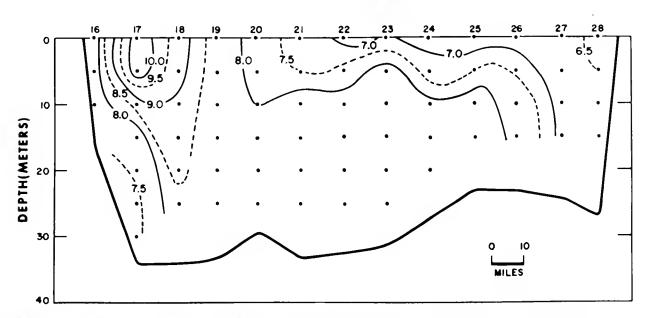


Figure 22. Distribution of dissolved oxygen (ml/l) along section G-G', from USCGC STATEN ISLAND data of 11-12 July 1968. Contour interval 0.5 ml/l.

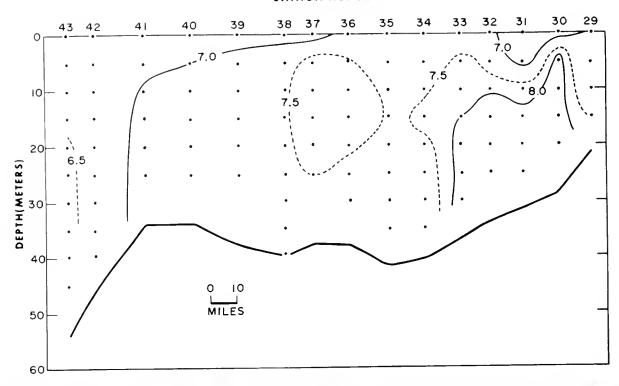


Figure 23. Distribution of dissolved oxygen (ml/l) along section F-F', from USCGC STATEN ISLAND data of 13-14 July 1968. Contour interval 0.5 ml/l.

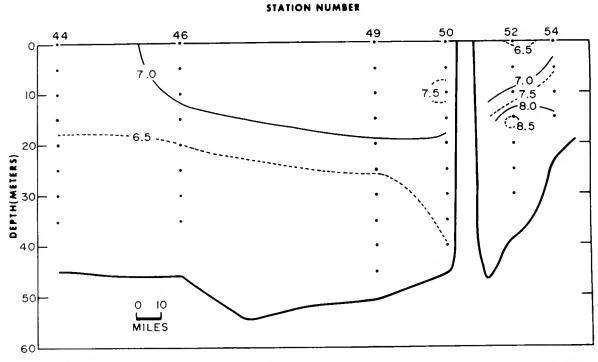


Figure 24. Distribution of dissolved oxygen (ml/l) along section E-E', from USCGC STATEN ISLAND data of 15-16 July 1968. Contour interval 0.5 ml/l.



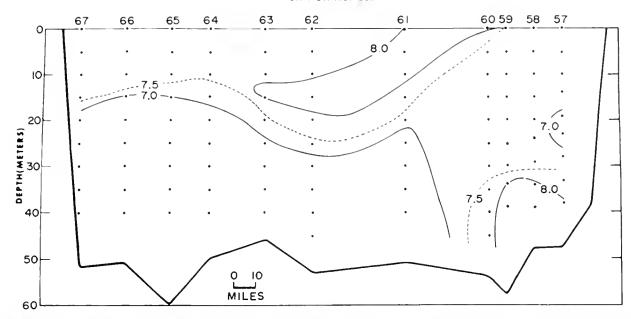


Figure 25. Distribution of dissolved oxygen (ml/l) along section D-D', from USCGC STATEN ISLAND data of 17-18 July 1968. Cuntour interval 0.5 ml/l.

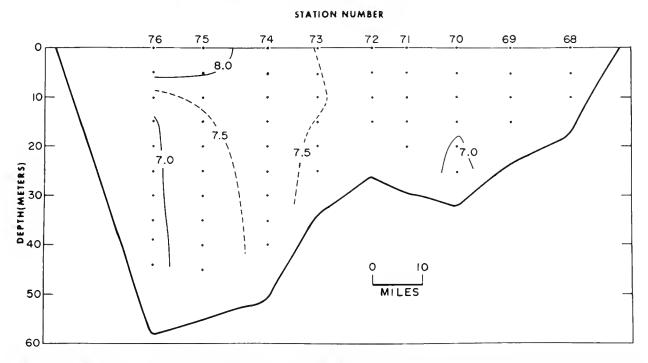


Figure 26. Distribution of dissolved oxygen (ml/l) along section C-C', from USCGC STATEN ISLAND data of 18-19 July 1968. Contour interval 0.5 ml/l.

APPENDIX A

OCEANOGRAPHIC DATA

A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M-2, Processing Physical and Chemical Data from Oceanographic Stations. (Rev. August 1964, supplement issued May 1966.)

To facilitate use of the oceanographic station data listing, entry headings which are not self-explanatory are described below.

Depth to Bottom Corrected or uncorrected sounding in meters.

Max, Depth of Samples. Depth of deepest sample to nearest multiple of one hundred meters.

Wave observations:

DIR Rounded to nearest multiple of ten degrees.

HGT In increments of ½ m. Sum of 5 meters plus increments of ½ m if 50 is added to

direction.

PER...... If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or

 $2\times$ (numeric entry) + 1. For other entries see WMO Code 3155.

SEA Sea state according to WMO Code 3700.

Weather Code If preceded by X, weather according to WMO Code 4501. If a two-digit entry,

weather according to WMO Code 4677.

Cloud Code

Type Cloud type according to WMO Code 0500.

Amount Cloud amount in eights. Entry of the numeral 9 indicates cloud amount could not

be estimated.

Water

Color Code Color according to Forel-Ule scale.

Transparency in whole meters as determined by Secchi disc.

Wind

Dir____ Rounded to nearest multiple of ten degrees.

Speed or Force If preceded by letter S, wind speed in knots; if preceded by letter F, wind force

according to Beaufort scale.

Barometer Barometric pressure given in tens, units and tenths of millibars.

Air Temp, °C Air temperature to tenths of a degree centigrade.

Vis. Code Visibility according to WMO Code 4300.

No obs. depths Number of observed levels associated with the station.

Messenger time Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of

release of messenger applicable to the observational level. For STD casts, indicates

the starting time of lowering the sensor.

Card type OBS designates observed levels. STD indicates the values at this standard level were

interpolated by a modified 3-point LaGrange formula.

Depth to nearest meter. A postscript T indicates depth was obtained thermometrically; Depth (m) 2 indicates uncorrected "wire out" depth. Postscript Q indicates value was marked doubtful by originator; P indicates value was considered doubtful by NODC. Postscripts P and Q retain this meaning throughout the following entries. T °C Temperature to hundredths of a degree Centigrade. Salinity in parts-per-thousand. S ‰ SIGMA-T Entered to hundredths. Multiply entry by 10-7 to obtain specific-volume anomaly in cubic centimeters per gram. Specific-volume Anomaly — \times 10⁷ Multiply entry by 10-3 to obtain anomaly of dynamic height in dynamic meters refer- $\Sigma \triangle Dyn$, $M \times 10^3$. enced to the sea surface. Sound Velocity Sound velocity according to Wilson's formula entered to tenths of a meter per second. Dissolved oxygen in milliliters per liter entered to hundredths. O2 ml/l Inorganic phosphate in microgram-atoms per liter entered to hundredths. PO₄-P μg-at/l Total-P µg-at/l Total phosphorus in microgram-atoms per liter entered to hundredths. NO₂-N μg-at/l Nitrite-nitrogen in microgram-atoms per liter entered to hundredths. Nitrate-nitrogen in microgram-atoms per liter entered to tenths. NO₃-N μg-at/l Silicate-silicon in microgram-atoms per liter entered to whole units. SiO₄-Si µg-at/l

Entered to hundredths.

Table 1.—Observed and interpolated oceanographic data from stations taken by USCGC STATEN ISLAND, 8–19 July 1968, prepared from NODC Listing No. 31–1270.

				1968,	prepar	ed from	NODC	Listin	ıg N	o. 31	1-12	70.						
REFERENCE SHIP	LATITU	ot Lo	NGITUOL 1	M/RSOEN SOUARE	STATION THE	YEAR		STATION		TO C	MAR. OEPTH	005	WAVE ERVATIONS	WEA-	Crono			NOOC
CODE NO. COOE	ļ · -	1/10	1/10 0 3	10" 1"	H YAO OM			NUMBER	10	TTOM S	MPL'S		HGR PIP SI		TIPE A M	1	- '	
311270 51	6405	N 17	12300w	234 42 TO		10 1968	3.7 St A I B)58 NO.	00		0 2	X1	0 1	1		0001
				COLDE	TRANS. OR.	SPEED MET	ER ORY	WET BULB	CODE		SPECI-	TIONS						
					29	\$15 05			8 1	11								
MESSING	CAST	CARO	OEPTH (m)	1 10	s ·/.	SIGMA-T	SPECIFIC VOLU	JM1 \$ 4	Δ D.	SOUN	0 0	2 ml/l	PO4=P	1014L-F	NO3-N	401-N	\$104-5	
HR 1/10	0 NO.	TYPE					ANOMALT-I	X	103	VELOCI	ITY		yg = a1/1	*# + #1/1	M8 - 00:	±9 + 01/1	18 - 01-	1-
		 STD	0000	0779	3225	2517	002803	5 00	00	1478	35	719	1 1					1
21	2	085	0000	0779	32253	2517	002003	, ,,	00	1478	35	719						
21	2	OBS STD	0005 0010	0775 0759	32253 3226	2518 2521	002769	9 00	28	1478		719 721						
21	2	085	0010	0759	32264	2521	002.07	, ••		1477	79	721						
21 21		085 085	0015 0019	0255 0196	32975 33031	2633 2642				1458		576 673						
		STD	0020	0194	3303	2642	001613	0 00	50	1455	56 (676						
21 21		OBS OBS	0024 0029	0189 0189	33040 33042	2643 2644				1455		580 570						
		STO	0030	0189	3304	2643	001604	4 00	66	1455		571						
21 21		08S	0034 0039	0189 0190	33033 33036	2643 2643				1455		574 580						
21	2	OBS	0044	0189	33046	2644				1455		570						
21	2	085	0048	0186	33042	2644				1455	28 6	571						
REFERENCE	·		-=	W/RSOEN	STATION TIP	a F	ORIGIN	ATOR'S			MAX,		WAVE	T	Crono	1		
CTAY IO. COOE	LATITU	OE LO	NGITUGE SOM	SQUARE	IGMT) MÖ I DAY HR	YEAR	CRUISE	STATION		10	OFF	0858	HOT PIET SE	WEA- THER CDOE	CODES		1	NODC TATION NUMBER
311270 SI	6401					30 1968	1			258			0 2	×1	0 2	T.		0002
311270.31	0401	214 1 11	222 W''	WAT	ER W	INO BAR	D- AIR TE	MP. °C	1	NO.	SPECIA		0121	1 71	0.2	1		0002
				COLOR	TRANS OIR,	OR IMPI		WET I	cons V	PTHS O	#SERVA1	TONS						
					29	515 06	0 086	* *		1								,
TIME	CAST ,	CARO	OEFTH (m)	1.5	s */	SIGMA-T	SPECIFIC VOLU	107	1. M.	VELOCI		2 m1/l	PO 4~P	FOTA L-2	NO2-N ug - 01/1	NO ₃ -N	SI O 4 = \$	
HR_1/10								X	103		-				24 - 0111	µg - σ!11	νg - 61 '	
'		STO	0000	0811	3237	2522	002758	6 00	00	1479	99 -	708	; 1					1
22		08S 08S	0000 0005	0811 0810	32372 32374	2522 2522				1479		708						
220	0	STO	0010	0803	3237	2523	002748	3 00	28	1479		706 708						
221		08s 08s	0010 0015	0803 0248	32373 32867	2523 2625				1479		708 585						
		STO	0020	0152	3299	2642	001618	8 00	49	1453	37 6	570						
221		08\$ 085	0020 0025	0152 0148	32988 32992	2642 2642				1453		570						
		STD	0030	0149	3299	2642	001614	7 00	66	1453	37 6	667						
221		085 085	0030 0035	0149 0147	32991 32991	2642 2642				1453		67						
221	8	085	0040	0147	32993	2643				1453	38 6	664						
221	8	085 STD	0045 0050	0147 0149	32989 3299	2642 2642	001614	9 00		1453		668						
221	8	085	0050	0149	32991	2642				1454		65						
REFERENCE			-=	M/RSDEN	STATION TIA	AE	ORIGIN	ATOR'S	01		MAX,		WAVE	WEA-	CTOND		-	NODC
CTET IQ. CODE	LATITU	0E LO	NGITUOE SO	SOUARE	MO DAY]HR	1/10 YEAR	CRUISE S	STATION NUMBER			OF MPL'S		RVATIONS	THER	CDOES	,	5	TATION
311270 51	6357	8N 17	2136W				BS2 00	3	00	64	00		1 2	×1	3 2			0003
				WAT		SPEED METE	- AIR TE			40. 085.	SPECIA							
				COOE	TRANS. OIR.	FORCE (mbs		+ +	ODE	PTHS	#36KAV							
					31	S14 05		7	· T	1								
TIME HR 1/10	CAST OF NO.	CARO	DEPTH (m)	1 %	s */	SIGMA-T	SPECIFIC VOLU	In? OTN	1. M	VELOCI		2 ml/l	PO4-P ug = a1/1	TOTAL=#	NO3-N	NO 1-N	10 - 64	pН
									\neg									
		STD	0000	0822	3205	2495	003010	7 00	00	1479		705 705						
000		08S	0000 0005	0822 0820	32054 32063	2495 2496				1480		707						
00	9	STD OBS	0010 0010	0352 0352	3268 32684	2602 2602	002002	2 00	25	1461		736 736						
000	-	OBS	0015	0138	32988	2643				1453	90 6	573						
0.0	8	STO OBS	0020	0134 0134	3300 32999	2644 2644	001599	0 00	43	1452		663 663						
00	-	085	0025	0130	32998	2644				1452	2.8							
00	8	\$10 085	0030	0131	3300 32998	2644	001597	9 00	59	1452		567						
00	8	085	0035	0130	32998	2644				1453	30 €	667						
00		08S	0040	0133	32991 33002	2643 2644				1453		550 564						
		STD	0050	0126	3300	2645	001591	1 00	91	1453	31 6	660						
00	8	085	0050	0126	33003	2645				1453	5 L 6	060						

3HIP CODE	LATITU	1/10	1/10 E	M/ ASDEN SQUARE	TATION TO	TEAR	CRUISE STA	TION	DEPTH DEPT TO DEPT BOTTOM S'MPL	Dest	WAVE RVATIONS HGT ME SI	THER CODE	CLOUD CODES		\$1	ATION UMBER
70 SI	6354	N 1	7206 W	234 32 WAI		VIND			0053 00	1 28 ECIAL	1 3	X1	3 2	1	1 (000
				COLDS	TRANS DIR.	OF INT		VET CODE	DEPTHS DUSER	VATIONS						
					30	\$14 05	6 094 0	83 8	10		,					
MESSENGI TIME HE 1/10	MO.	CARD	DEPTH IMI	1 70	s ·4.	SIGMA-I	SHERRE VOLUME	₹ ∆ D DYN, M ± 10 ³	SOUND	02 =1/1	701-7 -2 - 11/1	101AL-P	NO3-N #8 - at/1	HD 3-N	\$1.04=\$1 #4 + #4/3	ь,
					1											
		STO	0000	0694	3198	2508	0028951	0000	14749	758						
024		OBS	0000	0694	31982	2508			14749	758						
0.2		085	0005	0632	32068	2522			14726	796						
		STO	0010	0311	3261	2600	0020206	0025	14600	987						
0.2	4	OBS	0010	0311	32613	2600			14600	987						
0.2	4	085	0015	0134	32718	2621			14525	975						
		ST	0020	0109	3299	2644	0015936	0043	14518	660						
02	4	085	0020	0109	32986	2644			14518	660						
02	4	085	0025	0104	32999	2646			14517	652						
		STE	0030	0103	3300	2646	0015802	0059	14517	648						
02	4	OBS	0030	0103	32999	2646			14517							
02	4	085	0035	0103	32997	2646			14518	646						
0.2	4	OBS	0040	0104	32998	2646			14519	645						
0.2		085	0045	0104	32995	2645			14520	649						

REFERENCE				. :		STATION TI		ORIGINA	TDR'S	DEPTH	DEPTH OF	WAVE	WEA				YORK
787 ID.	CODE	LATITU	1/10	LONGITUDE 28		(GMTI	YEAR R_1/10		ATION JAMBER	10 10110M	OF DB	HGT PIE S	CDDE	TITE AM			UMBER
311270	si	6351	N :	17159 W	234 31 COLOR CODI		140 1968 VIND BAR 1910 MET 02 Imb	ER DRY	1418	0040 NO. 085. DEPTHS	SPECIAL OBSERVATIONS	1 2	X1	3 3			0005
						35	515 05	0 095	086 8	0.8		,			-	,	
	MISSENGI TIMI HR 1/10	or NO.	CARD	DEPTH (m)	1 %	5 -/	SIGMA-T	SPECIFIC VOLUM		A		PD 4 = P +9 + 61/1	TOTAL=P	ND2=N +0 - 01/1	NO3=N ug - et/l		
		ļ										ļ			1		1
			ST		0683	3214	2521	0027670	0000								
	039		085	0000	0683	32135	2521			147	-						
	039	7	085	0005	0527	32383	2560	0010000	0024	146							
		_	STO		0123	3248	2603	0019908	0024	145							
	039		085	0010	0123	32475	2603			145							
	230	•	085	0015	0028	32550	2614	0016717	0042	-							
			STI		0018	3282	2636	0016717	0042	144	_						
	039		OBS	0020	0018	32820	2636			144	_						
	0.34	3	OBS	0025	0018	32832	2637	2014636	0050		-						
			ST		0017	3283	2637	0016626	0059	144	76 705 705						
	031		OBS	0030	0017	32790	26340			1							
	039	9	OBS	0035	0018	32830	2637			144	77 706						

ETERENCE CTAY ID.	SHIP CDDE	LATITUO	1/10	LONGIT	UDE 1/10		SDEN DUARE		TIMON T	,	YE ▲ R	CRU		A TO E	DN.	1	10	MAX DEPTH DF	085	WAVE ERVATIONS	WEA- THEF CDDE	C0015		\$.	NDDC MATION UMBER	
311270	51	6348	N.	1715	2 w	23	4 31	0.7	بامر	150 1 VIND	968	T	2 00 AIR TE			١,	134	00	29	1 2	x1	3 4	•	1	0006	Ì
							COLD	TEANS	DIR	1910 01 10101	METI	ER .	BULB	# U		nel c	PTHS D		A TIONS							
									00	500	05	2	092	0.8	3 8	0	7			_						_
	HR 3715	T NO.	CAR		OEPTH G		, ,C	5	٠4.	SIGM	A -T		OMALT-E		₹ ∆ 04N 10	M	SOUN		02 mi/i	FO ₄ -F	101AL-P		ND3=N +9 - 8/ 1	51 O 4 - 5:	314	
		1												Ī								1				
			S1	0	2000		0667	32	4.2	254	6	00	2533	3	000	0	1474	44	754							
	0.5	3	089	5	0000		0667	3.2	421	254	6						1474		754							
	0.5	3	089	5	0005		0669	3.2	421	254	5						147		749							
			S 1	r D	3310		0596	32	43	255	5	0.0	2440	6	005	5	147		794							
	⊋5	3	063	5	0010		0596	32	433	255	5						147		794							
	0.5	3	08:	>	0015		0002		718	262							1446		785							
			S 1		0020		0022	32		263		00	721	y .	004	6	144		735							
	1.5	3	DB 5		1010	-	0022		732	263	1						144		735							
		3	089	5	UU25	-	0026	_	740	263							144		721							
			51	T D	0000	-	0025	32	74	263	2	00	01713	6	006	3	144		724							
	n 4	3	000		0000	-	0025	3.2	740	263	2						144	55	724							

REFERENCE	SHIP				= =	SOUARE	11	ATION			ORIGIN	ATC	R*S	DEPT	H DE		WAVE RVATIONS	WEA-				40DC
787 ID.	CODA	LATITU	1/10	LONGITUGE	5 7	10, 1,	MO		HR.1/10	TEAR		STAT		10 10110	() F	HG THE ST	CODE	THE AM			UA BEB
31127	o sı	6253	I I N	169183	,	233 29	0.7	10	197	968	BS2 00	7		003		0 00	0 X	х4	X 9			0007
71121	0.01	. 02)	114	107102			ATER		WIND	BARG	A ID TE		*C	l NO	T .		•		, , ,		,	00011
						COLO	R TRAIN		SPEED OR PORCE	METH	DRY		ET COO	000	0.00	SPECIAL ERVATIONS						
								19	515	06	5 064	0	58 1	08								
	MESSENG TIME HR 1/11	a NU.	CAR		(m)	7 %		s ·/	SIGN	1 A T	SMCIFIC VOLU		₹ △ D DYN. A ¥ 10 ³	4 3	LOCITY	0 2 ml/1	PO4=P ug = 81/I	101≜ L=P #g = et/l	NO ₇ =N ug = 01/1	NO3-N µg = a1/1	\$1 () \$1 90 - 01/1	рРт
			\$1	D 000	O	0275	32	264	260)5	001971	4	0000	1	4583	1038						
	19	7	085	000	Ü	0275	32	2639	260)5				14	4583	1038						
	19	7	085	000)5	U254	32	2633	260)6				1	4575	1028						
			\$T	D 001	0.	0035	32	68	262	2.4	001790	8	0019	14	4478	814						
	19	7	085	00	Ü	0035	32	675	262	2.4				14	4478	814						
	19	7	085	00	.5	-0018	32	693	262	8 8				14	4455	757						
			ST	D 002	0	-0037	32	70	262	9	001741	3	0036	14	4447	754						
	19	7	085	002	20	-0037	32	698	262	? 9				14	4447	754						
	19	7	085	002	2.5	-0045	3.2	698	262	9				14	4444	720						
			ST	D 003	3.0	-0050	3.2	270	263	0	001733	5	0054	14	4443	715						
	19	7	OBS	003	0	-0050	34	701	263	0				14	4443	715						
	19	7	085	203	3.5	-0050	3.2	705	263	3.0				1.4	4444	716						

EFERENC	SHIP	LATIT	UDE	LON	GITUDE	DELIST 40CTs	VI. 25		STA	TION T (GMT)		YEAR			TATIO	N	DEPT		MAX. DEPTH DE	01	W A SERV	A TID	NS.	WEA	C	DDES		NODE	
DE NO	D. 3331	╽.	1/10		1/10	- 4	10*	1,	MO	DAY	R.1/10		,	NO. 1	NUME	ER.	BOTT	MC	S'MPL'S	OIR	НG	PEX	3 E A	COD	773	t Aw	7	 NUMBER	2
1127	70 51	624	9 N	168	858 *		233	28	0.7	باعل	VIND	968		S2 00		: 1	003 NO		00		lo	х		X4	×	9		0008	8
								COLDA	TEAN IMT	DIR	SMID OI FOICE	M ET (mb	ER	DRY BULB	W E		0.00	i.],	SPEC DBSERV										
										20	512	07	5	077	05	7 1	07	T			1								
	MESSEN TIME HR 1/	GR CAST	ÇA TY		DEPTH	(m)	t	7	,	٠/	SIGN	1A-T		CIFIC VOLU		₹ △ D DYN, A x 103		SOUP		0 2 ml/		D		1014 L=1		2-N at/1	NO3-N		
			S	TD	000	0	0]	138	32	66	261	16	0	01860	6	0000	1	45	23	882									
	2.2	1	08	S	000	0	01	38	32	658	261	6					1	45	23	882									
	2.2	1	OB.		000			43		658	261								26	888									
				T D	001			33		67	262		0	01797	5	0018	_	44		826									
	2.2		OB		001			33		665	262							44		826									
	2.2	1	08		001		-00			669	262				_				62	777									
				TD	002		-00			67	262		0	01778	0	0036	_		60	758									
	2.2		08		002		-00			665	262						_	44		758									
	2.2	1	08		002		-00			672	262		_		_			44		747									
				TD	003		-00			68	262		0	01757	7	0054		44		735									
	2.2	1	08	5	003	0	-00	75	3.2	677	262	? 7					1	44	49	735									

ID. CODE	LATITU	DE	LONGITUDE	Dunit	sou.		517	IGM1		TEAR	CRUISE		ATION		DEPTH TO	DEPT	H n	WA'S BSERVA		NS	W EA-		LOUE	5	5	NODC TATION
ND.	•	1/10	1/1	0 2	10*	1.	MO	DAY	HR,1/10		NO.	NI	JMBER		80110 N	S'MP	L'S DIR	HGY	P (#	SEA	CODE	17	FLAV	1		#38MU
270 51	6245	N	16841	,	233	28	0.7	10	236	1968	B52	009			0044	00	18	1	2		x 1		3 1			0009
						WA			WIND	BAR	1	IR TEM			NO.	1		7								
						COLOR	TEAN		17EE	MET	ER D	RY ILB	W ET BULB	COOE	0.64		ECIAL VATION	s								
					ĺ			17	508	07	6 06	1	055	7	09											
MESSENGE TIME HR 1/10	약 NO.	CAR		(m)	1	70		s •4.	SIG	M A - T	SPECIFIC		, 0	△ D TN. M x 10 ³		UND	02 ml		0.4-		1014 L=P +g + st/l		03-h	NO3=N µg + e1/1	\$1.0 4~\$ up = a1/	
																									•	
		ST	D 000	0	0.2	205	32	64	26	10	0019	177	0	000	14	553	901									
239)	OBS	000	0	02	205	3 2	641	26	10					14	553	90 I									
239	•	085		-	0	196		640		1.1						549	896									
		ST	-			180		64		12	0019	007	0	019		543	926									
239		085				180		641		12						543	926									
239)	085	-			017		647		22				_	-	471	816									
		ST				003		65		23	0017	1962	0	038		465	823									
239		OBS				003	-	648		23						465	823									
239	•	085				001	-	648		23						464	814									
7.0		51				000		65		23	0017	930	0	Û56		465	811									
239		085				000		650		23						465	811									
230		055				002		654		24						465	806									
230	1	085	004	U	-00	003	30	654	26	24					14	466	8 n I									

CTEP COOR	10. NO.	SHIP	LATTI	1/10	LONG	1001	T DOE	500 500	ARE		DAT H	IME IE,1/10	TEAR			STAT	10 N		DEPTH TO BOTTOM	OFFTH OF S'MPL"	0	SERV	A TION	- 00		LOUG		\$1	HODC ATION UMBER
311	270	SI	6240) N	1682	1 W		233		07		215	1968	В	52 01	0			0037	00	18	1	2	X	. ;	(9			0010
									WA	T E A	1	WIND	HAR		A IR TE	MP.	7	VIS.	NO.	SPE	CIAL	1							
									CODE	TRANS	OIR.	01	M ET (mb		BULB		ret ULB	COOK	OBS. DEPTHS	CALLES	ATIONS	1							
											17	507	0.8	3	075	0	72	0	07										
		HESSING TIME HE 1/1	CAST NO.	CAR		DEPTH	l/m (1	٣	3	٠/	SIG	MA-T		CUIC VOLI		DY	∆ D N. M. 10 ³		DCITY	0; =1	/	PO 4=P	101AL-		03=N - et/1	HO3=H ug = qt/l	\$1 O a = \$1 1/10 - \$1	pН
										1																			
				S1	O 1	0000)	06	524	32	45	25	54	0	02456	6	00	00		727	704								
		01	6	089	5	0000)		524		454	25								727	704								
		01	8	083	ŝ	000	5	04	424	32	503	25								646	865								
	018			51	rD	0010		0	153	34		26	2610		001917		2 002			531	942								
		01	8	065	5	001	J	0	153	32	596	26	10						14	531	942								
		01	8	089	5	001	5	00	800	32	618	26	16						14	507	917								
				SI	0	0020)	00	085	32	53	26	17	0	01852	4	00	41	14	502	880								
		01	8	089	ò	0020)	00	285	320	528	26	17							502	880								
		01	8	OBS	5	002	5	00	280	32	626	26	17						14	501	878								
				51	D D	0030)	0(180																				
		0.1	8	089	5	0030)	00	081																				

C'NT ID. CODE	LATITUDE 1/10	LONGITU	OE 3		SOEN		ION I		YEAR	CRUISE NO.	5	ATOR'S TATION	,	OEPTH TO BOTTOM	MAE. DEPTH OF S'MPL'S	OBS	WAVE ERVATIO		WEA- THER CODE	CLOUD		S1	NODC FATION UMBER
311270 SI	6234 N	16804	, w	233	1				1968	852	01:	1		0029	00	19	1 2		X4	X 9			0011
31.270.51	02.74 /4	1000		12,5	WAT			WIND	LAN	1	IR TEA		1	NO.	3760			,				,	,
					COLO	TRANS	OR	57610	MET	ER D	EV EV	WET		OBS. OEPTHS	OBSERV								
							00	500	0.8	7 07	72	071	0	06									
MISSENGR TIME HR 1/10		ARD DE	EPTH (m)	'	t	s	٠/	şıgı	M A -1	SPECIFIC ANOMA		<i>ii</i> } 1	₹ ∆ D N. M x 10 ³		OCITY	0 2 m1/1	PO		101A L=P vg - e1/1	NO3=N vp = et/1	NO3=N yg = st/1	\$1 O4=\$1 10 - 01/1	рН
	1 1	STD C	0000	0	670	32	28	25	34	0026	454	. [4 (0000	14	743	725		-			1	İ	i
042	0.6	35 0	0000	0	670	32	276	25	34						743	725							
0.42	2 08	1S 0	0005	0	609	32	2 7 7	25							719	734							
		TD C	010	0	245	32		25		0021	138	7 (0024		568	800							
042	2 08	S 0	010		245		388	25							568	800							
0.4.2		_	015		227	-	392	25	-						561	802							
			020		226	32		25	-	0021	1234	4 (0045		562	799							
0.42			020		226		390	25							562	799							
0.4.2	2 00	s c	025	0	224	32	393	25	80					14	562								

CTEY ID.	SHIP	LATITUDE		LONGITUDE	28	300		STATION TIME			TEAR		ORIGIN	_			DEPTH	MAI. DEPTH			VAVE		W EA-		DUD			NODC TATION
DDE NO.	CODE		1/10	1/1	0.7	10*		MOI		HR_1/10		ľ		STATI NUM			MOTTON	S'MPL"	1 -			10 51	CODE	TTPI				UMBER
31127	0 51	6232	N	16742 W		233	27			070	1	8	852 01	2		7	0029	00	2	-t	0 2		X4	+ -	9			0012
							WAT			WIND	-	10.	4 (9. 74		τ		NO.			٦'			,					
							CDLOP	18AN	DIR	5PH	0 M	ETER	DRY	W BU		CODE		ORSERV	CIAL A TION	5								
								_	00	+ -	-	93	-i	0	_	1	06			1								
	MESSENG TIME HIL 1/11		CAR		(m 1	1	٣	,	٠4.	\$11	GMA-1	1	SMCHIC VOLI		DAI	Δ Q 103		INO	0; =	1/1	PO.	4-P	101AL=#	NO2	- 1	NO3-N	\$1.04~\$1 #4 - #1/1	
						1						1					1											
			SI	D 000	0	0	708	32	31	2	531		002670	7	00	00		758	71									
	06	7	083			0	708		306		531							758	71									
	06	7	083		5	0	628	32	349		545							728	715									
			S 1	ID 001	0	0	350	32	41	2	580		002206	5	00	24	146	514	786	•								
	06	7	083	5 001	0	U	350	32	411	2 :	580						146	514	786	5								
	0.6	7	089	001	5	0	190	32	499	2	600						145	546	82	2								
			SI	002	Ü	Û	189	32	50	2 (500		002014	Ü	00	45	145	547	820	>								
	0.6	7	089	5 UO2	Ü	0	189	32	500	2	600						145	547	826	5								
	0.6	7	069	002	5	0	187	32	494	2 (500						145	547	824	٠								

TET 10.	SHIP	LATITU	DI	LONG	HOUTE	Dept 1	947.25 \$QU		STA	TION		YEAR	CRUI		STAT	ЮN	_	DEPTN TO OTTOM	DEPTH	0	a s e	V A VE	IONS	W E THI CO	IF C	CODES		5.7	OOC ATION
ODE NO.	1		1/10		1/10	Α.	10°	1,	MO	DAY	HR.1/10		NO	1.	NUM	BER	_ •	Ollow	S'MPL	S Dat	-	GIP	10 50	A	11	MA P			0 % 8 (•
311270	sil	6226	N	167	26 W		233	27	07	11	090	1968	BS	2 01	13		c	031	00	00	0	o Ix		X4	. ;	x 9		- 1 -	0013
J	•							WA	TER		WIND	BAR		A IP TE]	NO.		CIAL	7								
								COLOR	TBAN Imi	L OIL	OR	MET	ER	ORY BULB	W.	ET C	00E	OBS. DEPTHS	OBSERV		S								
										00	500	10	0	083	0	72 (06			1								
	MESSENG TIME HR 1/10	NO.	CAI		DEPTH	(m)	1	4		٠/	SIG	MA-1		PIC VOL		₹ £ DYN	. M.	VELO		02 m	1/1	PO.		101AL-		03=N - 01/I	NQ3-N yg - nt/l	\$1 O = -\$1 #9 - ot/l	рН
			s.	10	000	0	0	719	32	02	25	0.8	00	2895	54	001	00		759										
	08	7	083	S	000	0	0.	719	32	024	25	08						14	759										
	0.8	7	089	5	000	5	0.6	552	32	026	25	16						14	733										
			S.	r D	001	0	0	139	32	32	25	89	00	2120)6	00	25	145	520										
	0.8	7	OB:	5	001	0	0	139	32	317	25	89							520										
	0.8	7	083	ŝ	001	5	0	125	32	321	25	90						14	515										
			S'	rD	002	0	0	124	32	32	25	90	00	2107	7.7	004	6	145	15										
	0.8	7	089	5	002	0	0	124	32	322	25	90						145	515										
	0.8	7	085	5	002	5	0	122	32	325	25	91						145	515										

CTEY ID.	COOE	LATITU	OE 1/10	LONGITUOE	DEST	SOUAL SOUAL	t E		ION T	IME 18,1/10	PASY	CRUISE NO.	STA"	ION	-	DEPTH TO BOTTOM	MAX DEPTE OF STMPL	085	WAV SERVAT	TIONS	WEA THER CODE	COD	ES	5	NODC TATION UMBER
311270	SI	6222	N	16707 W		233	27 (07	11	105	1968	852 0	14		-	0034	00	00	0 >		X4	x	,		0014
J		0222					WAT			NIND	BAR	A 10	TEMP.	٣		NO.		CIAL							
							OLOR ODE	TRANS.	DIR	SMIO OF FORCE	MET	ER ORY		VET ULB	CODE	OBS. DEPTHS		ATIONS							
									00	500	09	5 069	0	64	0	07									
	MESSENGE TIME HR 1/10	및 NO.	C AR((m l	1 .	τ	\$	٠/	SIG	I-AN	SPECIFIC VO		DYF	3 O 1. M. 10 ³		DCITY	02 ml/l		4-P - 81/1	101AL-P				
																							1		
	•		ST	0 000	0	08	29	30	71	231	9 9	00402	39	00	00		785	692	•						
	110)	085	000	0	08	29	30	707	231	39						785	692							
	110)	085			0.8			831	241							781	690							
			ST			05		316		250		00296	69	00	35		675	686							
	110		085			05			618	250							675	686							
	110)	OBS			01			345	25		00200		00	٠.		523	776							
	110		ST			01		32		259		00209	09	00	00		523 523	785 785							
	110		085			01			356 359	25							523	774							
	110	,	OBS	_		01		32		25		00208	74	00	A 1		523	767							
	110)	085			01			359	25		00200	7 ***	J 0	01		523	767							

REFERENCE CTRY 10.	SHIP	LATITU	DE J	LONGITUDE	1 2	SOU	DEN ARE	STA	TION IGMT		YEAR	CRUISE	RIGINA	OR'S		DEPTH	MAX.	OB!	WAVE		WEA	CLC				NODE
ODE NO.	CODE	•	1/10	1/1	10.3	10*	1.	MO	YAG	HR.1/10	5	NO.		MBER		BOTTOM	S'MPL"	DIR.	HGT PE	32 I # 3	COD	719	A W 1			UMBER
311270	SI	6218	N	16651 V	,	233	26	07	11	127	1968	852	015			0032	00	36	0 2		Х4	х	9			0015
							WAT			WIND	BAR	_	IR TEM?	· °C		NO.		CIAL	,		,					
							COLOR CODE	TRAN (m)	OR	5 M	D MET	ER O		W ET BULB	CODE	OBS. DEPTHS	OBSERV	A TIONS								
									33	50	5 09	1 08	3 3	080	5	06										
	MESSENG TIME HT 1/1	CAST NO.	CAR		(m)	,	4	,	٠/	\$1	GMA-1		VOLUM!	101	∆ D N. M. 10 ³		DCITY	02 ml/l	PO.		TDTA L-1			NO3-N 10 - 01	\$1.0 4-\$1 99 - 01/1	
			ST				122		70		801	0096	5702	0.0	000		806	649								
	12		089				122		703		801						806	649								
	12	9	089				434		094		388						618	689								
			ST				410		40	_	494	0030	0271	0.0	163		626	783								
	12	9	085				410	31	395	2	494					14	626	783								
	12	9	083	5 00	.5	0	179											784								
			51	rD 003	0 9	0	178	31	40	2	513	0028	3460	00	93	14	527	784								
	12	9	QB9	5 00;	0	0	178	31	395	2	513					14	527	784								
	12	Q	089	00;	25	σ	173	31	392	2	513					14	525	788								

REFERENCE	SHIP				1.5	97.25 500			TION T		YEAR	-	ORIGIN.			DEPTH	MAE.			A VE	1NS	WEA-		000		1 .:	ATION
181 IO.	CODE	LATITU	1/10	LONGITUDE	30	10*				HP,1/10		NO.		TATION LUMBER		80110H	S"MFL"				18 A	1 000		A U 1			UMBER
+		/ 210			1	233	38	0.7		221	1968	B S 2	01	ζ.		0016	00		T		1	X4	X	9	1		0016
311270	1 51	6318	יו מכ	16838 W	1	233	WAT	I E B		WIND	BAR	i	AIR TEA	AP. C		NO.		CIAL	٦`			,		_			
							CODE	TRANS	OR	SPEE	METI	R	DRY IULE	W ET BULB	con	OBS. DEPTHS	COLLEGE	ATIONS									
									32	520	0.8	5 0	67	061	1	03			1								
	MESSENG FIME MR 1/1	- 70 U.	CARG		(m 1	t	℃	s	٠/	SEG	MA-T		C VDLU	;; D	∆ 0 tN, M 1 10 ³		OCITY	03 ml/		10		101AL=1			NO3=N #8 - at/1	\$1.04=\$1 #4 - 01/1	ρН
			ST	D 000	0	0	467	32	2 3	25	554	002	456	1 0	000		659	763									
	22	3	085	000	0	0	467		225		554						659	763									
	22	3	085	000	5		437		288		62		_				649	770									
			SI	001	0		372	32	_		73	002	269	1 0	024		623	773									
	2.2	3	085	001	0	0	372	32	354	2.5	73					14	623	773									

REFERENCE C187 IO.	SHIP	LATITU	01	LONGITU	DE	1000	1A - 251 50UA		STA	TION 1		YEAR	CRUIS		TATIO) N	_	DEPTH TO	DEPT	08	W A VE		WEA- THER CODE	CODES		51	DOOC ATION
C008 NO.	1000	•	1/10		1/10	-	10"	1.	мој	TAD	HR. 1/10		NO	. ,	*UMI	E#	4	#0110W	2, we b!	'S DI	HGTPI	# \$t	•	77P[A M	1	- 1	0.771.
31127	osi	6324	N	16820) w		233	38	07	12	000 1	968	85	2 01	7			0034	00	32	1 1		X4	x 9	1		0017
31121	0. 5.	0) 2 4		10020	•		7	WA			WINO	BARG	1	AIR TE				NO.		ECIAL							
								COLOR	18AN (m)	S DIR.	01 01 01 01 01	M ET I	ER	BOT# D#A	WI	7 0	ODE	OBS. OEPTHS		VATIONS							
										32	\$12	0.8	5	055	04	7 6	5	07									
	MESSENG TIME HR 1/1	CAST NO.	CAP		EPTH	(m)	T	℃	1	s ·4.	SIGM	A-T		FIC YOUU		¥ ∆ Din.			UND	02 01/	PO.		101AL=P +p+/1		ND3=N yg - et/l	\$1.04=\$1 #2 - 01/1	рН
															_												
	1		51	ro c	000	0	0.3	94	32	57	258	8	00	2125	7	000	00	14	633	1032	,						
	0.0	2	089		000	0	03	94	32	570	258	8 8						14	633	1032							
	0.0	2	089	5 (000	5	03	189	32	572	258	19								1033							
			51	ro u	001	Ü	0 1	38	32	63	261	4	00	1882	7	002	2 0		524	862							
	0.0	2	089	-	001			.38		629									524	862							
	00	2	089		001			09		696				. 706					468	767							
			51		002		-00			71	262		00	1735	8	003	38		454	751							
	00	_	089		002		-00		-	713	262							_	454	751 749							
	0.0	2	089		002		-00			721	263			172/	,	206			453 454	744							
			51		003		-00			71	262		00	1734	0	005	00	_	454	744							
	0.0	2	089	5 (103	U	-00	26	32	712	262	. 9						14	474	144							

TET 10.	CODE	LA TITUDE	10	LONGITUDE	MOCT.	\$QUA	ARE		TON T		TEAR	C		STATION NUMBER	IN .	DEPTH TO BOTTO	01	1 08	WAVE SERVATIONS HGT FEET SE	WEA THEP CODE	0001	5	51	NODE PATION UMBER
11270	SI	632931	ų l	16802 w		233	38	7		020 MIND	1961	B B	S2 01			0034			2 2	X 4	4 8			0018
							CODE	TEAM	DIR	101	D ME	TER bul	DRY	W.E.		OBS.	0.000	CIAL VATIONS						
									01	51	9 0	75	060	06	0 7	06								,
	MISSING THE HE TIT	CAST NO	CARD	DEFTH (m, 1	T	75		٠4.	\$11	SMA-T	12	FCIFIC VOLU	107	\$ ∆ 0 x 10 ³	1 1	LOCITE	02 mi	PO 4=P	TOTAL-F	NO2=1	NO3=N #9 = 811	\$1.04-\$- #2 - 81/1	g 14
			ST	0000)	0	382	32	58	2 '	591	0	02104	8	0000		+628	919						
	0.2	2 (DBS	0000)	0 :	382	32	583	2	591					14	4628	919						
	0.2	2 (385	0000)	0:	382	32	593	2	591					1.	4629	916						
			ST	0010)	0]	117	32	62	6	615	0	01874	6	0750	1.4	515	890						
	0.2	2 (วธร	0013)	0 :	117	32	623	21	515					1 4	4515	890						
	0.2		085	0015	,	0.0	028	32	669	2 :	524					14	4476	858						
		_	510				0.5		65		523	C	01793	3	0038	14	4466	851						
	32	. (OBS	5020		00	005	32	653	2	523					14	4466	851						
	12		085				001	3.2	678	21	626					1.4	4465	849						

REFERENCE IO CODE NO). co	HIP	6334	DE 1/10 N	LONGITUI 16747	1/10				12	1 HR.1/10 050 WIND	1968	0-	D. SE		-	DEPTH 10 80110A 0033	00	010.	1.1		WEA- THER CODE	7 8	v 1	S N	NODC TATION UMSEP
								COD	OR TEA	, 012	FOR	CE (mb	•1	BULB 0.6.7	056	COD	OEPTHS	ORCERY								
	٠ ا	SSENGE TIME 1/10	CAST NO.	CA		PfH imi		1 %		3 ·4.		5 06 5MA=1	SPEC	067	Mª E	E △ D YN. M x 10°	so	UND	02 ml		Da=P - 41/I	101A L - P HB - 01/1			1	ρН
		052		S 08:	S 0	000	(0411 0411 0411	3	248 2481 2498	2 5	580 580	00	2208	7 0	000	14	639 639 640	815 815				l			
		052 052	:	08: 08:	TO 00	010 010 015	()408)408)353	3 3 3	250 2498 2513	25	581 581 588		2193		022	14 14 14	640 640 618	827 827 828							
		052 052		08: 08:	s 0	020 020 025	(0172 0172 0116	3	262 2621 2651	26	511 511 517	ψÜ	1910	, 0	U43	14	541 541 517	847 847 834							

	LATITUDE	L	ONGITUDE	DE:#1	\$QU			ION IGMT	TIME	YE	AR	CRUISE		TATIO	N	1	PTH O	MAX. DEPTH OF	085	WAVE ERVATIONS	WEA-	CLOU			NODC TATION
008 NO.	. 1/	10	1/10	2	10"	1.3.	MO 1	YAG	HP.1/1	0		NO.	•	8MUP	P	801	TOM	S'AMPL"	DN	HGT PER ST	CODE	TYFE A	υT		AUWBEX
311270 SI 6	5340 N	1	67275W		233,				072	19	68	BS2	02			00	29,	00	33,	2 2	X 2	7 8	1		0020
					,	WA	ER	↓_	WIND		BARC)·	AIR TEA		- VIS	N		SPE	CIAL						
						COLOR	TRANS	DIR	- SPE		(mbe		DRT ULB	3 U L	COD		BS.	DSSERV							
								33	52	3	060	0	69	٥٥	5 5	0	6					, _		,	,
MESSENGE TIME OF HR 1/10	CAST NO.	CARD T1PE	DEPTH	(m)	1	℃	5	٠/	s	IGMA-	-т	SPECIFIC	ALY-E		≨ ∆ 0 0 v N. A 1 0 3	и.	SDU VELC		02 ml/l	PO 4=P ug = et/i	TOTAL - P	NO2+6	NO3-1		рн
HR 1/10			+		+		-							_		+				1					1
1 '	1	STO	000)	0	493	32	50	2	573	. '	002	274	5	0000	, י	146	574	792	+			'		
072	C	BS	000	0	04	493	32	502	2	573							146	574	792						
072	0	85	000	5	0	482	32	509	2	575							146	570	799						
		STO	001	0	0.	475	32	51	2	575		002	253	7	0023	3	146	568	797						
072	C	BS	001	0	0.	475	32	506	2	575							146	568	797						
072		BS	001		0.	226	32	567	2	603							145	563	836						
	•	STD	002			180	3.2	5.8	2	607		001	947	9	0044		145	544	839						
072	_	BS	002			180		_	-																
072		BS	002			175	22	590	2	608							14	543	842						

EFERENCE	SHIP				-=	A. RSDEN		IDN T			ORIG	NATO	R*S	DEPTH	DEPTH	. 1	WAVE	WEA-				1000
IEY IO.	CODE	LATITU	DE 1/10	LONGITUDE	N DC	SQUARE 10" 1"		GMT	+R,1/10	YEAR	CRUISE NO.	STAT		01 01108	0.5	003	EPVATIONS	CDDE	TIPE AU			L MEET
11270	SI	6345	7N	167105w		233 37 WA COLOR CODE	~		WIND	BAR	ER DRY	EMP.	Et cou	0033 NO. OBS. DEPTHS	391	34 CIAL VATIONS	5 4	X 2	7 8			0021
						,	ļ_	34	525	04	5 061	0	56 5	06	Щ,							
	MESSENG TIME HR 1/11	CAST NO.	CART		im)	1 ℃	. s	٠/	\$1G	MA-T	SMCIFIC VOI		\$ △ 0 DYN. / # 10 ³		OCITY	O 2 m1/1	PO4-P 29-01/1	TOTAL-P	NO2-N vg - ol-l	NO3-N pg - at 1	51 C 4 - 51	ÞН
			ST	0 000	0	0691	31	79	24	93	00303	34	0000) 14	745	722						
	09	0	085	000	0	0691	31	192	24	93				14	745	722						
	0.9	0	OBS	000	5	0635	31	935	25	11				14	725	748						
		_	51	0 001	Ú	0214	326	0	26	06	00195	77	0025	14	558	849						
	0.9	0	OBS		0	0214	345	97	26	06				14	558	849						
	0.9	Ō	OBS	001	5	0202	326	515	26	8.0				14	553	842						
			ST	0 002	0	0201	326	5 2	26	09	001934	42	0044	. 14	554	840						
	0.9	0	085			0201	326	516	26	09				14	554	840						
	0.9	0	OBS		5	0198	22	18	26	0.0				14	553	835						

IEPERENCE IEP ID.	SHIP	LATITU	OE 1/10		2 2	5QUA	PE		ION T		YEAR	CRUIS		ATOR'S STATION NUMBE		DEPTH TO SOTTON	DEPTI OF S'MPL	1	0858	_	TION	ت ا	WEA.	CLO	DES		S	HOOC IATION UMBER
311270	SI	6351		166520W			36	77	12	107 1	968	B 5.2	02	2		0032		1			4	NA	х 4	X	9		_	0022
						0	FOJO:		+-	SMID OF FORCE	METI (m8)		AIR TEI DEY BULB	WET BULB	C001	NO. OBS. DEPTHS	OBSER	CIAL	45									
									01	525	04	0 0)64	058	0	06												
	#1551HG 1:#4 HR 1/10	NO.	CARI TIPE		-1	T	τ.	s	٠	SIG A	A-T		C VOLU		E △ D In. M I 10 ³	10	UND	0;	1/1		04-P - 01/I			NO2-		NO3-N us - et/l	\$1 O4=\$1 µg = qt/1	рн
																									\dashv			
			ST	0 0000	}	08	15	31	14	242	25	003	3684	2 (000	14	785	69	0									
	10	9	OBS	0000	ŀ	08	15	31	137	242	25					14	785	69	0									
	10	•	085	0005		05	40	31	904	252	0					14	686	77	1									
			ST	0 0010)	01	75	32	51	260	2	001	999	9 (028	14	539	82	2									
	10	•	OBS	0010)	01	75	32	506	260	2					14	539	82	2									
	10	7	085	0015	•	01	56	32	525	260) 5					14	532	81	9									
			ST	0 0020)	01	54	32	53	260	5	001	968	8 0	048	14	532	81	9									
	10	9	OBS	0020		01	54	32	529	260	15					14	532	81	9									
	10	9	085	0025		01	51	34	531	260	5					14	531	81	9									

REPERENCE COOL NO.	SHIP	LATITU	OE 1/10	LONGITUOE	NOC14	5QU	ARE		TION (GMT)		YEAR	CRUIS NO.		STATIC NU 448)N	DEPTH TO EDITON	DEPTH OF S'MPL'S	1	WAVE SERVATIONS [HG THE] SE	WEA- THER CODE	CODES		S'	NODC ATION UMBER
31127	SI	6356	N	166355W		233	36 WA	TER		126 WIND	LAR	0-	2 0.2 AIR TE		V15.	0031	SPE	CIAL	2 2	Х4	х 9			0023
							CODE	(m)	DIR	5 2 3	ct (mai	•1	062	05		DEPTHS 06	OBSERV	ATIONS						
	MESSENG films HR: 1/10	NO.	CAR		(m)	т	°c		٠/	1	SMA-T	SPECIF	C VOLE	UME	₹ △ D DYN. A 1 10 ³	, ,,,	UND OCHY	02 ml/l	PO _A =P ug + et/ i	101AL=F +g = 61/1	NO2-N vg - ot/1	NO3~N 19 - 81/1		рН
	12) 3	ST OBS	_			746 746	-	46 460		•60 •60	003	3351	4	0000		762 762	702 702			ļ	I	I	l
	12		OBS ST OBS	001	0	00	223	32	380 54 537	26	588 510 510	001	1920	7	0026	14	558 498 498	840 857 857						
	12		085	001	5	00	77	32	543 54	26	511	00)	1910	6	0046	14	496 495	855 849						
	12		085 085	002			73		543 542	26	511						495 496	849 844						

REFERENCE	SHIP					£ 5	9 2	DEN	\$17	ATION !				ORIGIN	ATORS		OFFTH	MAK	. 1		AVE		WEA-		auc			NODC
181 IO.	CODI	LATITI	- 1		SITUDE	200		ARE		IGMT		TEAR	CRUIS		STATIO		10 301104	. 01	-		VA TIO		CODE		DES			HOITAT
оо∉ но.		-	1/10		1/1	0	10*	1*	MO	YAD	HR_1/10		NO.		HUMBE		*0110	" S'MPL'	5 DI	HC	,द मुब	56.4	CODE	TEPE	AUT			OWELE
31127	0 51	640		144	18	,	233	46	0.7	1,2	147	1968	100	02	4.		0027	00	35	. 2	,		X4	l x	9	ĺ		0024
21121	0.3,	. 0404	. 14	100	10 %	'	1233		TER		WIND				MP C		NO.	1		7,2	12	'	. ^-	` ^	,			0024
								COLO	TRAN	1 DR	SPEED	- BAR		DRY	WET	COD	085.	ORGEN	CIAL									
								CODE			POPCI	(mb	-1	BULL	BULL		DEPTHS	S OF ALL										
										32	522	02	5 (75	06	7 6	05			7								
	1100	CAST NO.	CAI		DEPTH	(m)	1	Ψ.		s ·/	1	MA-T	SPICIF	IC VOLL	144	₹ ∆ D	so	UND	O ₂ mi	/I I	PO4-	- 1	101A L=F	NO ₂		NO3-N	51 G 4-51 #g = at/1	
	H# 1/1	0	-				-		+	-	-		-			K 10*		-		-		-		-	-	24 - 0		-
	ı	1	S	ro	000	0	0	772	3.1	178	24.	81	003	3148	3 1	0000	14	776	692			1			- 1			ļ
	15	0	QB:		000			772		778	24	-						776	692									
	15		OB:	5	000	5	0	679	3.1	830	24	9.8					14	741	713	3								
			S	10	001	0	0	190	32	221	25	77	00	2231	6	0027	14	542	826									
	15	0	OB:	5	001	0	0	190	3 2	214	25	77					14	542	826	,								
	15	0	083	5	001	5	0	183	3.	233	25	79					14	540	826	•								
			S	ro	002	0	0	184	34	222	25	79	002	2218	8 (049	14	540	833	}								
	15	0	08:	5	002	0	0	182	3.	2224	25	79					14	540	833	ļ								

										,				_		MAX.	_					_		
CTET IO.	SHIP	LATITU	- 1	ONGITUOE	Dept.	SOUARE		STATION	"	YEAR	CRUISE NO.	RIGINATO STA		1 1	70	OF STAFF	1	WAVE ERVATIONS	t H	EA-	CLOUD CODES		5.7	ATION .
311270		6407	8N 1	6600 W	\vdash	2 3 3 4	6 0 WATE		170 WINO SMI	1968 BAR MET (mb	BS2	025 IR TEMP.		0	23 0, 85, 11H5	0.0	30 CIAL ATIONS	2 2	x		6 7		(0025
	MESSENGE TIME MR 1/10		CARO TYPE	OEPTN	(m)	1 6		s ·/.		GMA-1	SPECIFIC	VOLUME AL7-310'	2 △ 0 0 y N, 7 x 10 ¹	2.	A 6 7 0 1		02 =1/1	PO 4=P 19 = 01/1	IDIA:		NO2-N ug - 07/1	NO3=N ug = et.1	\$1 € a = \$1 µg + at 1	рн
	170 170 170)	STD OBS OBS STD OBS OBS	000 000 000 001 001	0 5 0	093 093 070 020 020	2 2 2	3075 30746 31677 3201 32005 32008	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	376 376 483 560 560		1445 3985	0000	3	148 148 147 145 145	25 49 44	667 667 840 840	I	ļ		I			
EFERENCE TEV 10.	SHIP	LATITL	JOE	LONGITUOE	Deuf T	M. RSDE SQUAR	E	STATION	T1	YEAR	CRUISE		TION	7	EPTH 10 110M	MAX. GEPTH OF	1	WAVE SERVATION	5 1	EA- HER DOE	CLOUD		. 5	NODC TA*ION UMB(*
311270		6413	1/10 4N 1	7/10 65411W	\top		5 0		190	1		026	MBER	+	23	S'MPL	32	2 2	-	(4	X 9			0026
							WATE DLOR OOE	R OI	100	Ct Imb	ER B	ULB I	wet co	0.0	10. 985. PTHS		CIAL /ATIONS						,	ē
	MESSENGI TIME NE 1/10	및 NO.	CARO TYPE	OFFTH	(m l	1 7	:	s •4.	. 51	GMA-T		VOLUME	₹ ∆ 07N. x 10	٥. ١	vero 200		07 ml/	PO4-P	101A		NO2-N ug - 01/1	NO3-N 48 + 01/1	\$1.04-5: +g = a1/1	рΗ
			STO			039		3148		502	002	9523	004	1	146		790							
REFERENCE	190 190		OBS OBS	LONGITUGE	0 5	039 039 039	95 94	3148 3147 3149 STATION	5 2 7 2	502 502 503		ORIGIN A	OR'S	0	146 146	21 21 0EPT	790 793	WAVE ISERVATION	5 1	WEA-	Cronp		9	NODC TATION
787 IO. 008 NO.	SHIP COOE	D LATHT	OBS OBS	LONGITUDE	O 5	039 039 039	95 94 EN SE	3147 3149 STATION	1 TIME	502 503	CRUISI NO.	ORIGINA'		D 80	146 146	MAX OEPTI OF S'MPL	790 793	HGT PER	SIA C	H ER	TYPE A M		9	TATION
DE NO.	SHIP COOE	· 	OBS OBS	001 001	O 5	039 039 039 500AF	95 94	31470 3149 STATION IGN MO DAY	TIME	502 503 YEAR 1961 MEIO MEIO MEIO MEIO	CRUISI NO.	ORIGINAL STAND	OR'S TION MBER	00	146 146	MAN OEPTI OF SIMPL	790 793	HOT PER	SIA C	HER	CODES		9	TATION
TET 10.	SHIP COOE	6419	OBS OBS	001 001 LONGITUGE 1/1 165227W	O 5	039 039 039 500AF	EN LE LO LOR	3147 3149 STATION IGN WO DAY) 7 12 ER TRANS O	1 TIME HR.1/1 HR.1/1 HR.1/1 SH	502 503 YEAR 1961 MEIO MEIO MEIO MEIO	CRUISINO. B BS2 ROTTER Bb1 SMCIN	ORIGINAL STANLE STANLE NULL OZ 7 AIR TEMI	OR'S TION MBER WET GUET 094 7	000 000 000 000 000 000 000 000 000 00	146 146 146 10 110 10 10 10 10 10 10 10 10 10 10 10	MAN OEPTI OF SIMPL	790 793	HGT REE	10 TA	X 1	TYPE A M		,	OO 2
787 IO. DDE NO.	196	6419	OBS OBS	001 001 LONGITUDE 11/1 165227W	0 5 ILIDOM	039 039 039	74 70 56 56	31479 3149 STATION IGN WO DAY 77 12 ER TRANS O	1 TIME 2 TO 1 TIME 2 TO 2 TO 2 TO 2 TO 2 TO 2 TO 3 TO 5 TO 5 TO 2 TO 2 TO 2 TO 4 TO 5 TO 5 TO 5 TO 6 TO 6 TO 7 TO 7 TO 8	7502 503 YEAR 1961 1961 100 MA	CRUISINO. B B S Z RO- TER bal SPECIFICANO 0 0 5	ORIGINA' STANL O27 AIR TEMI ORT BULB O4	OR'S TION MBER WET OTH OTH OTH OTH OTH OTH OTH OTH OTH OT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	146 146 146 146 146 146 146 146 146 146	MANA OCT STATE OF STA	790 793	MGT PER 2 2 2	10 TA	X1	178 AM	NO3-N	5: C4 5	OO 2
REFERENCE	196 SHIP COOE TO ST. WITSTEND THAT 1/11 21 21 21	6419	OBS OBS UDE 1/10 9 N STE OBS OBS OBS	001 001 LONGITUDE 11/1 165227W	0 5 LIDON 10 0 5 0 0 5 0 0 5 110 0 1	0399 0395 0395 10° 10° 10° 10° 10° 10° 10° 10° 10° 10°	74 774 774 774 774 774 774 774 774 774	31470 3149 STATION GO DAY TO THE TEAMS OF	TIME	7 YEAR 1961 0 0 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CRUISION NO.	ORIGINA - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	OUS	00000000000000000000000000000000000000	146 146 146 146 146 146 146 146 146 146	MAA GEFT	790 793 31 656 656 658 693 660	WAVE BSERVATION	10 TATA	X1	NO2-N	NO3=N µg = ot.1	S+ C 2-5	OO 2
TIPE 10.	MESSENGE CODE MESSENGE MESSENGE CODE MESSENGE MESSENGE CODE MESSENGE CODE MESSENGE MESSENGE CODE MESSENGE CODE MESSEN	6419 6419 11 11 11 11 11 11 11 11 11 11 11 11 1	CARD TYPE STE OBS OBS OBS OBS	001 001 1001 1001 1000 000 000 000 000	0 5 Lino 1 5 0 0 5 0 0 5 1100 M	0399 0395 0395 10° 10° 10° 10° 10° 10° 10° 10° 10° 10°	EN EE 11 / 445 CC	31470 3149 STATION (GA) 3149 STATION (GA) 377 12 ER TAME (GA) 2930 2929 2929 2929 2929 2929 2929 2929	Time	502 503 YEAR 1961 11961 1100 ME 1100 M	CRUISINO. ORIGINA 1 NL O27 AR TEMIL O04 C VOLUM 1 NL O4 O79 ORIGINA 1 NL O27 AR TEMIL O 4 O 79 ORIGINA 1 NL O27 AR TEMIL O 4 O 79 ORIGINA 1 NL O27 AR TEMIL NL O27 AR	000 005	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	146 146 146 146 146 146 146 146 146 146	000 000 000 000 000 000 000 000 000 00	790 793 31 CEIAL VATIONS 656 658 693 660	WAVE BSERVATION BOTHER 12 2 2	1 1013 1	WEA THER	NO2-N B 1	NO3=N NO3=N NO3=N NO3=N	S+ C 2-5	NOCC	
REFERENCE TO NO.	MESSIMO COOR NOT THE TOTAL COOR ST. SHIP COOR ST. SHIP COOR O. ST.	6419 6419 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CARDO TYPE STEORS OBS OBS OBS OBS	O01 O01 LONGITUDE '1// 165227W OEPTH OO00 OO00 OO00 OO01 LONGITUDE '1// 1650731	0 5 1100 1 1	0399 0395 0395 10° 10° 10° 10° 10° 10° 10° 10° 10° 10°	74 74 70 56 34	31470 3149 STATION (GA) 3149 STATION (GA) 377 12 ER TAME (GA) 2930 2929 2929 2929 2929 2929 2929 2929	1 TIME TIME	502 503 11961 11961 11961 11961 110 110 110 110 110 110 110 110 110 1	CRUISINO.	ORIGINA 1 NL O27 AR TEMIL O04 C VOLUM 1 NL O4 O79 ORIGINA 1 NL O27 AR TEMIL O 4 O 79 ORIGINA AR TEMIL NL O27 AR TEMIL O 0 OR	OODS TOPS ATION TOPS ATION WEI CONSTITUTE TOPS 000 000 000 000 000 000 000 000 000 00	1466 1466 1466 1466 1466 1466 1466 1466	000 000 000 000 000 000 000 000 000 00	790 793 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	WAVE PSERVATION PROPERTY TO THE PSERVATION PROPE	10 10 10 10 10 10 10 10 10 10 10 10 10 1	WEAR THERE	COOLIST NO2-N NO	NO3-NA 95-01.	\$1 C = -5 \$1 C = -5 \$1 C = -5	NODC THE STATE OF	

CTOY ID.	CODE	LATITU	DE 1/10	LONG		50 St	SDI.	1		TION IGAT		16.48	CRU		ATOP	N	10 10 10110	H DI	A IL LPTH OF APL'S			VE LTION	- 1	WEA- THER CODE		015			NODC STATION NUMBER	
31127	0 51	6436	BN	166	335W	23	3 4	.6	07	13	183	1968	B 5	52 02	9		002	2	00	32	1	1		Х4	9	9			0029	,
31121		0430					CC	WAT	ER	Dø.	SPEED OF FORCE	MET Int	10- 168 131	AIR TE	WE TUL	cos	OLPT	HS OF	SPEC	IAL ATIONS										
	HE 1/10	NO.	CARC		DEPTH (m)		1 7	=		13	\$11	01	540	084		¥ 1 ₹ △ D DYN. 4 1 10 ³	A	SOUND ELOCIT		02/		O4−P • 11/1		7A L-P	NO1-		NO3-N	() Ca-		
	183		ST 08S 08S		0000 0000 0005 0010		082 082 080	25	29 29	49 492 502 29	22 22 22 23	95 98		04924		0000	1	476 476 476 465	7	703 703 703 728										
	183		08S		0010		051	17	30	293 673	23	96					1	465 463	6	728 741										

EFERENCE	SHIP	LATITU	DE	LONGITUD	Lind		PSDEN BARL	STA	TION T		YE AR	CRUIS		STATIO	N	0 10 M	DEPTH OF	1	WAV				CLOUE			NODC STATION NUMBER
004 NO.		•	1/10	• "	/10	10*	1.	MO	DAY	18,1/10	1	NO.	. _ '	NUMB	ER	10110	S'MPL'S	0.0	HGT	1	IA CO	56	TIPE A W	-1		40.000
1127	n s t	6433	N	16652	w	233	46	07	13	200	1968	las:	2 03	0		0029	00	1			1 x	4	x 9	1	- 1	0030
1121	J1 J 1	04))	14 1	10072	•	1233	WA			WIND	J BAI		AIR TE			NO.	-		, ,	,					,	
							COLO	TRAN	S OUR.	SPEE	O ME	ER	ORY	with		180	OBSERV	A TIONS								
							CODE	(m.)		700		18)	BULB	IUL	•	UEFIRS										
									13	51	0 0 1	.2 (086	08	2 0	05										
	MISSING	CAST	CARD				1 2	Τ.				INCH	1C YOU	341	ΣΔ¢	501	UND	02 =1/1	PO	4+1	TOTAL		NO2=N	NO3-N	\$104-5	
	HR 1/10	MO.	TYPE		H (m)	1	, ,	1	٠/	310	5MA-1	ANO	W ALT-1	107	1 10 ³		DCITY	02 40	-a-	a+ /1	#g - 0	17	vg - 01/1	µg - at/1	#E + 44/	i pH
	1		ST	D 00	00	, c	839	3.0	05	2:	336	004	4531	1	0000	14	780	679	'		,			,		
	20	4	085		00		839		045		336					14	780	679								
	20		085		05		188	32	174	2 !	574					14	539	814								
			ST	0 00	10	C	202	32	33	2 5	686	00	2149	5	0033	3 14	549	819								
	2.0	14	085	00	10	(202	32	333	2 !	586					14	549	819								
	20	4	085	00	15	(199	32	339	2 !	587					14	548	822								
			5 T	D 00	120	0	197	32	34	2	587	00	2137	8	0055	14	548	819								
	20	4	OBS	0.0	20		197	32	344	2	587					14	548	819								

EFFRENCE	SHIP	LATITU	IDF.	LON	GITUDE	1.00	100 100		STA	TION		YEAR	-	ORIGIN			DEPTH	DEPTH	. 1	WAVE		WEA	Cror			NODC
.181 ID.	CODE		1/10		7/1		10*	110	MO	ran	HR,1/10		CPUISE NO.		MOITAT		BOTTOM	SHAPL	5 03	HG f Pi	• 3E	CDDE	117 4	4+7	N	UMBER
31127	0 51	6428	17N	167	12 6		233	47	07		220	1968	BS2	03	1		0032	00			1	X4	х	9		0031
21121	J. J.	0420			1			WA		Ť	WIND	BAR	-	AIR TEA		Τ,	NO.	1	-			,				
								COLOR	TEAN	2 00	1918 01	° METI	R	DRY	WET	COD	0.41		CIAL /ATIONS							
										00	-	$\overline{}$	0 1	11	097	0	06									
	₩1538NG TIME HR: 1/1	PAU.	C.A.		DEPTH	(m)	,	tc		s • ₁	\$10	GMA-T		C VOLU	a, D	1N, M		UND OCITY	02 -1/1	10.		**************************************	NO2- 98-01			рн
			S	T D	000	0	0	919	31	58	24	. 44	003	500	3 0	000		830	652						1	
	22		08		000			919		583		44						830	652							
	22	2	08		000			745		218		19						773	688							
			-	T O	001			435		44	_	74	002	266	4 0	029		650	759							
	22		08		001			435		436	_	74						650	759							
	22	2	08		001			178		584		80		022	2 0	0.0		542	834							
				TD	002			174		59	_	09	001	933.	2 0	050		541	828							
	22		08		002			174		593		909						541	828							
	2.2	2	QВ	S	002	. 5	0	177	3.2	592	26	508					14	544	883							

REFERENC	SHIP	LATITE	JDE .	LONGITUOE	T Sept	500		57A	IGMT		TEAR	CRUIS		STATIO		OEPTH TO	DEPTH OF			A VE VA TIO	45	WEA-	COD	E	5	NODC "ATION
008 NC). coo.		1/10	1/	0 2	10*	1.	MO	YAG	HR,1/10		NO.		NUMBE	1	BOTTO	A STMPL	S Dia	H	ST PER	51 A	CODE	1188 A	41.7		UMBER
3112	70 SI	6425	5N	16731	w	233	47	97	13	239	1968	85	03	2		0034	00	27	1	2		X4	X	•		0032
							WA	TER		WIND	BAR	o- L	AIR TE	MP_ C		NO.		CIAL	7							
							CODE	TRAN	E DIR	SPEED OB FORCE	METI	R	DEY	WET			OBSERV		S							
									21	509	01	1 (89	084	4 1	06										
	MESSEN timi HR 1/	CAST NO.	CARD	OEPTH	i (m)	1	τς		٠/	SIGA	T-AM		C VOLU		₹ ∆ 0		OCITY	0 2 ml		PO4~1		D14.1-P			\$1 C 4 - \$1	
	1		STO				673		28	25:		00;	2649	9 (0000	_	744	714								
		0	085 085	000			6 7 3 657		275 294	25: 25:							744 739	714								
	-		ST				351		44	258		002	184	0 (0024		615	781								
	24	0	OBS	00	0	0	351	32	442	258	82					14	615	781	l							
	24	0	085	00	15	0	178	32	640	26	12					14	543	853	3							
			ST	002	0	0	178	32	63	261	12	001	906	3 (0045	14	544	841								
	24	0	085	002	0	0	178	32	632	26	12					14	544	841								
	24	. 0	095	00:	5	0.	180	32	634	261	1.2					14	546	841								

EFERENCE INT.	CODE	LATITU	l	LONGIT	UDE	DRIFT	squ.	ARE		TION IGM1	n		E A R		STATE	ON	DEPTH TO BOTTOP	DE.	QF	0851	WAV ERVA	tions	WEA THE	, C	ODES	1	- 5	DODE NCITAT
NO.	1		1/10		1/10	-	10*	1.	MO	DAY	HR,1/	0		NO.	NUM	BER	-	, 2,W	PL'S DI	2	HGTP	£# 2	IA COO	111	H AV	1		TI MIBER
311270	SI	6421	5N	1674	95W		233			14	020	119	968	BS2 03	3		0037		00 2	5	1 2	2	X 4		(9	1		0033
								COLOP COOE	_	DIR	- (IED)II	BARG METE (mb)	R DRY	W SU	1 000		1000	SPECIAL ERVATION	NS								
										0.2	SC	4	01	0 075	0	2 0	07											
	MESSENGI TIME HR 1/10	Y NO.	CAI		DEPTH E	(m)	1	2	,	٠/٠٠	2	IG M A	− ₹	SPECIFIC VOLU		₹ △ D DYN. N x 10 ³	A UES	UNO OCITI	02	n1/1		4-P	101AL- µg = e1/) ₂ =N - 01	NO3-N µg - 01/1	5104-5- -9-01/	рн
			5	T D	0000)	0.6	545	32			541		002577	5	0000		734										
	022		083		0000			545		326		541						734										
	022		083		0005			559 504		308 32		550		002425	9	0025		699 678	_									
	022	2	085		0010			04		317		557		002.23			_	678										
	022	?	083		0015			325		504		590						605										
			_		0020			129	34			612		001900	0	0047		521	-									
	022		08:		0020			129	_	599 633	_	612						521										
	022	4			0030			111 191	32			616		001851	8	0065		515 506										
	022	,	08		0030			91		633		61			•			506										

	LATITUDE		1/10	DRIFT	50U	A RE		TION	1	YEAR			IATOR STATIO NUMB	N	1	DEPTH TO DITOM	DEPTH OF	08	WAVE SERVATION		WEA-	CODE	5	. 5	NODC TATION
-	4179N	1	100w		233	48 WAI	0 7 ER	14 1 OIR	101	196	RO- EYER nbs1	AIR TE DRY BULB	MP. TO	, co	0	040 ND. OBS.		1	1 2	SEA	x1	3 6	-	-	0034
MESSENGE		180			\Box		_	33	510	0	20	078	07	2 7 ≨ ∆	-	08			T						
TIME 07		YPE	DEPTH (mΙ	1	°C		s ·/	SIC	M A -1		FECIFIC VOLU		DYN. R 10	M	A\$FO 200		Q2 m1/1	NO - 0		10ta (====================================	NO7=N	NO ₃ =N	51 C4-51	рн
		1					-												Ì						
	5	TO	0000)	06	594	32	28	2 5	31	(002670	1	000	0	147	752	712							
043	0.6	15	0000)	06	594	32	283	2 :	31						147	752	712							
043	0.6	\$	0009	5	06	591	32	289	2 5	32						147	752	712							
		TO	0010)	06	537	34	37	2 5	45	(002536	9	002	6	147	133	734							
043	0.6	S	0010)	0.6	537	32	369	2 5	45						147	733	734							
043	0.6	\$	0015	5	0 :	29	32	663	2 5	81						146	93	768							
		T0	0020)	0.4	24	32	80	26	03	(001984	6	004	9	146	52	733							
043	08	5	0020)	0.4	24	32	797	26	03						146	52	733							
043	0.6	15	0025	5	04	11	32	791	26	04						146	48	732							
	5	TO	0030)	03	364	32	7.7	26	0.7	(001953	0	006	8	146	28	726							
043	0.6	5	0030)	0:	364	32	765	26	0.7						146	28	726							
043	Q E	5	0035	5	0.2	232	32	675	26	11						145	71	736							

FERENCE	SHIP		i		- :		SDEN		ION T			000	JIN AT	28°5		DEPTH	DEPT		WAVE	W EA			,	4ODC
10. 06 NO.	CODE	LATITU	1/10	LONGITUDE	101	\$QU			BAY I	(8,1/10	EAR.	CRUISE ND.	STAT			10 10110M	OF S'MPL	1 0036	HGE MAILS		TTPL AU			MOITA
1127	SI	6414	4N	168289		233					968	BS2 0	35			0042	00	32	1 2	X 2				0035
1121		0 11 1		10020	•		WA			MIND	BARC	4.10	TEMP	℃ [NO.				,			,	
							COLOR	18ANS	DIR.	5911D 09 104C1	METE	R DRT		v 8 1 U L B	CODE	0.65		ECIAL VATIONS						
									36	509	0.2	3 067	0	61	7	08								
	MESSENG 11ME H4 1/10	NO.	CAR		(m)	ī	℃	5	٠	SIGM	A - T	SPECIFIC VO		DYN	2 D 10 ³		IND	02 #1/1	PO4=P	101AL=F		NO3-N ug + el/1	\$1:0 a = \$1 17.10 a = \$1	ρН
			51	D 00	00	0	574	32	95	259	8	00203	05	00	00	14	713	741						
	06	3	085	00	U	0	574	329	945	259	8					14	713	741						
	06	3	OES	000) 5	0	572	329	952	259	9					14	713	746						
			SI	D 00	0	0	572	329	95	259	9	00202	48	00	20	14	714	748						
	0.6	3	085	00	0 1	0	572	329	951	259	9					14	714	748						
	06	2	085	00	15	0	569	329	952	260	0					14	714	748						
			ST	0 00.	20	0	522	33	0.0	260	9	00193	25	00	40	14	596	750						
	36	3	085	00;	0	0	522	330	001	260	9					14	596	750						
	06	3	085	OÚ.	25	0	362	329	944	262	1					14	529	717						
			ST	0 00	10	0	370	329	97	262	2	00180	7.7	00	59	14	533	712						
	ÜБ	3	085		30	0	370	329	965	262	2					14	533	712						
	D.to	3	OHS		3.5	0	370	329	973	262	3					14	534	720						

TET ID.	SHIP	LATITU	DE		Det 1	\$00	DEN ARE	STA	TION T		FASY	CRUISE	SINATO		DEFTH	DEFT	H DI	WAVE		A3-W E3-HT	COD		2.	NODC TATION
ODE NO.		•	1/10	1/10	- 6	10.	1.	MO	DAT	48,1/10		NO.	NUF	WBER	80110A	S'MP		HGT	1 51	CODE	TTPL A	4.17	N	UMBER
311273	SI	6410	N	168545W		233	48	0.7	14	083 I	968	A 19	36 TEMP		0038			1 2	ĺ	X 2	7 8	3		0036
						ĺ	CODE	18AN Uni	S DIR.	57E0 01 FOICE	MET dmb	ER DRY		A ET COD	240	A 15 C 1 I	ECIAL VATIONS							
									35	512	03	5 069	0	63 6	07									
	MISSENG TIME HE 3710	NO.	CARD	DERTH	(m)	,	70		٠4.	SIGN	A-T	SMCIFIC VI		₹ ∆ D	4	UND	02 =1/		-P	101Acut				рн
			STO	000	0	0.6	577	32	66	256	3	00236	86	0000	14	751								
	0.8	5	085	000	U	06	577	32	658	256	3				14	751								
	0.8	5	085	000	5	0 9	562	32	672	257	8				14	705								
			STO	001	0	0:	333	32	71	260	15	00196	45	0022	14	611								
	0.8	5	OBS	001	0	0 :	333	32	712	260) 5				14	611								
	0.8	5	OBS	001	5	0.2	284		716	261					14	591								
			STO	002	0	02	282	32	74	261	2	00190	43	0041	14	591								
	0.8	5	085	002	0	02	282	32	736	261	2				14	591								
	0.8	5	085	002	5	0 2	280	32	732	261	. 2				14	591								
			STO	003	0	02	282	32	73	261	2	00190	77	0060	14	592								
	9.8	5	085	003)	0.2	282	3.2	732	261	2				14	592								

CTET ID. COT		VDE 1/10	LONGITUDE		DATE :SDEN		ON TIM MTI CY HR,I	7	EAR	CPUISE !	ATOR'S STATION NUMBE	. –	DEPTH TO ROTTOM	DEPTH OF S'MPL"	015	# A VE 18 - A TIONS	THE	CLOUD		5.7	ADDC ATION UMBER	
311270 S	1 6436	5N	10914 W	23	WA	+	WIN	D	BARO		MP C	vis	0038 NO.	5986	IAL		1 ×2	7 8			0037	
					CODE	1,001	DIR	01CF	(mbs)	BULB	BULB		DEPTHS	ORSERV	ATIONS							
				-			34 S	11	040	056	053	6	06									_
1 "	HNGE CAST	CAP		m1	1 10	5 .	4.	SIGMA	-1	SPECIFIC VOLU		4 10 ₁		UND DCITY	02 -	104=1 24 - 41 I		NO2=N Fa * 21	NO3=N #4 = 81/1	\$1.04-\$1 #2 + at/1	ρН	1
						1						_	1			1	-					7
,		. S.1	0 000	0	0636	324	8	2554	4	002452	9 (0000	14	732	680			*				
	192	085	000)	0636	324	78	2554	4				14	732	680							
	102	085	000	5	0634	3241	82	2555	5				14	732	758							
		SI	D 001	5	0623	324	8	2556	5	002436	3 (024	14	728	768							
	162	085	001	J	0623	3241	81	2556	5				14	728	768							
	1 - 2	088	001	5	0288	326	71	260	5				14	592	774							
		ST	0 102)	0282	326	7	260	7	001952	7 (046	14	590	758							
	102	085	002)	0282	326	7.2	260	7				14	590	758							
	102	085	3002	5	0280	326	72	260	7				14	590	750							

REFER		SHIP	LATITU	DE	LONGITUDE	100	14. 250 SQUA		STATI	ON TI		EAR	CRUIS	ORIGIN	ATOR'		1	DEPTH	MAX.	O		A VE	45	WEA-		OUD			ATION
000	NO.	CODE		1/10	1/1	10 =	10*	1*	MOIO	AY H	R.1/10		NO		NUMB			MOTTO	OF S'MPL"	S □#.	н	1 012	SEA	CODE	[1PI	A 44		N	UMREO
311	1270	SI	6402	N	1692B W	T	233	49	07 1	4 1	119 19	968	BS.	2 03	8		c	040	00	34	2	2		X4	X	9	i		0038
	1214			.,				WAT			VIND	BARC		AIR TE				NO.		CIAL									
								CODE	TRANS.	DIR	5PE10 04 FOECE	METE	R	DRY BULB	W.E.		on el	OBS. DEPTHS		ATIONS	1								
										34	514	040	0 (057	05	6 6	7	09			1								
		MESSENG TIME HR 1/1	CAST ND.	CAR		(m)	1	۳.	5	٠/	SIGMA	-1		FIC VOLU		₹ ∆ DYN. x 10	м.		IND	0 2 ml		PO 4=1		OTAL-F ug = et/l	NO:		ND3=N #R = 01/E	\$1.04=\$1 yg = 01/1	рН
				S 1	D 000	Ų.	06	72	324	9	2550	0	00	2487	9	000	0	14	746										
		11	9	089	000	0	06	72	324	90	2550	0						147	746										
		11	9	089	000	5	05	92	325	80	2561	6						14	716										
				51	D 001	0	03	34	327	6	260	9	00	1931	3	002	2	146	512										
		11	9	089	001	0	03	34	327	57	260	9						146	512										
		11	9	089	001	5	02	95	327	58	261	2						145	96										
				S 1	0 002	0	0.2	72	327	6	2614	4	00	1879	7	004	1	145	587										
		11	9	089	002	0	02	72	327	58	2614	4						145	87										
		11		085	002	5	0.2	71	327	59	2615	5						145	687										
				S 1	D 003	0	02	71	327	5	2614	4	00	1882	3	006	0	145	88										
		11	9	089	003	Û	02	71	327	54	261	4						145	88										
		11	9	089	003	5	02	71	327	53	2614	4						145	5 B 9										
		1.1	Q	OBS	0.04	Ü	0.3	390	327	51	2601	80																	

REFERENCE SHIP	LATITU	DE 1/10	ONGITUDE		RSDEN UARE	STATION GAT		YEAR		ATOR'S TATION SUMBER	DEPTH TO BOTTOA	OFF	OBS	WAVE ERVATIONS HGT PER ST	WEA- THER CODE	CLOUD		51	NODC FATION UMBER
311270 SI	6406	5N 1	69565W	23				1968	B52 03		0038	00	34	2 2	X 2	7 8			0039
					COLOR	TRANS DIR.	FOICE	(mb	ER ORY NI BULB	WET CO	IS. OBS. DEPTHS	0.005.00	CIAL						
MESSENG TIME HR 1/1		CARD TYPE	DEPTH	m)	1 70	5 %.	SIG	04 va-1	9 064		M. Juri	UND	0 2 ml/l	PO4=P ug = e1/1	10TAL-F µg - 61/1	NO2-N #9 + ol/i	NO3=N pg = at/1	\$104=\$1 pg + of/1	рн
		STO	0000)	0762	3241	25		002666	ь 000		781	654						
1 4 1 4		OBS OBS	000	,	0762	32406 32718	26	11	001717	7 003	14	781 583	721						
14		OBS OBS	0010 0010 0011)	0174 0174 0172	3282 32824 32860			001757	7 002		543	712 712 707						
14		STO	_)	0169	3284 32841	26. 26.	29	001741	6 004		543	709 709						
14		OBS	002		0169	32837	26					543	701						

REFERENCE CTEY ID. CODE ND.	SHIP	LATIT	1/10	LONGITUDE	DEDET	SQUARE	E		IGMI	TIME D HR.1/		/EAR	CRU		STATI NUM	ON	\neg	DEPTH TO BOTTOM	DEPTH OF S'MPL'	000	WAVE ERVATIONS	WEA- THER CODE	CODES		5	NODG TATION UMBE#
311270	SI	6409	96N	17024 W		cc	WAT			WINC		968 8ABC ME16 (mbs)- R	AIR TE DRY BULB		ET	VIS.	0034 NO. DBS. DEPTHS		Q2 CIAL VATIONS	1 2	х5	6 8			0040
									35	S	0	05	5	064	06	0	7	06								
	MESSENGI TIMI MR 1/10	NO.	CA		(m.)	1 %		5	٠/		SIGMA	A-T		OMALT-X		OYN	2 D 1. M. 10 ³		DONE	O2 ml/l	PO4-P pg = at/1	TOTAL-P	ND;-N pg - al'i	NO3-N	\$1 O4-\$1 pg = of 1	рН
			S	TD 000	Q.	068	0	32	12	- 2	249	2	0.0	3045	5	00	00	14	B 2 2							
	16:	3	OB:	s 000	Ú	0.66	Q.	32	118	3 2	249	2						14	822							
	16:	3	OB:	5 000	5	086	1	32	118	3 2	249	2						14	B 2 4							
			S	70 001	0	025	2	32	85	- 2	262	3	00	1797	9	00	24	14	578							
	167	3	OB	5 001	0	0.25	2	32	845	, ;	262	3						14	578							
	16		OB:	_		018			902		263								550							
				10 002		018		32	90		263		0.0	1703	3	00	42		549							
	16	3	0B		Q	018	32	32	903	3 2	263	3						14	549							
	16		QB:			016		320	903	, ;	263	3						14	550							

CTET ID.	SHIP	LATITUOE	ic	DNGITUDE	200	300			TION		TEA			ATOMS		DEPTH TD	MAL DEFTH OF		WAVI		WEA- THER	COS		NOOC	\Box
C004 NO		• 1/	10	1/10	2.1	10*	1.	MOI	DAY	HR,1/10	<u> </u>			NU MBER		DOTTOM	S'MPL'	S Dist.	HGT	10 51	CDDE	1196	A 44.1	NUMBE	•
31127	0 51	64124N	1	7050 W		234	40	07	14	180	196	8 E	352 04	1		0034	00	35	1 2	2	X 2	6	в	004	
			-				WA	TER		WIND		ARO-	AIR TE		J	NO.		CIAL					-		
							COLDE	1844	DIR	101	D M	ETER mbs)	DPY	WET	CODE	DBS. OEPTHS	marra.	ATIONS							
									01	511	_	64	070	066	7	06									
	MISSING TIME HIL 1/10	W NO.	CARO TIPE	DEPTH	lm i	1	2	,	٠/	210	5MA-1		MCHIC VOLU	o	Δ 0 rN. M L 10 ³		DCITY	02 ml/		4-P - at/1	FOTA (= P				,
			STO	000	0	0	960	-	09	_	•77	0	003188	7 0	000	_	852	655							
	18		85	0000			960		086		77						852	655							
	18		BS	000			958 121	32	097 81	_	78	C	01732	4 00	25		852 519	656 705							
	18		ВЅ	001			121		813		30					149	519	705							
	18	4 0	85	001			116		817		30						518	701							
	18	4 0	STO	002			114 114	32 32	82 815		30	C	001726	/ 01	042		518 518	701 701							
	18	4 0	BS	002	5	0	114	32	817	26	31					145	519	701							

REFERENCE	SHIP		T	-:	" "SOEN	STA	TION 1			ORGIN	2*807A	7	DEPTH	MAZ, DEPTH		WAVE	WEA				1000
C187 ID.	CDD#	LATITUDE 1/1	LONGITUO	/10	SQUARE	MO	DAY I		EAR		TATION IU MBER	80	10	OF S'MPL'S		HOT FER S	5000			\$1	UMBER
31127	o sı	64167N	171175	w	234 4	VATER DR TRAN	≤ Oue	WIN O	BARC METE Imba	R ORY	AP. C	20	046 NO. DBS. EPTHS	SPEC		2 2	×1	4 5			0042
							02	511	070	0 071	061 7	. (09								
	MESSENG TIME HIL 3/11	% NO. 1	APO DEP	TH (m)	1 %		s %.	SIGMA	-t	SPECIFIC VOLU		ر د د	AEFO		0 2 m [/]	FO4~P	101AL-F		NO3=N vg = 01/1		ьн
			 STD 00	000	0956	 31	45	2428	3	003653	 B 000	0	148	42							
	20			000	095	3 1	451	2428	3				148	42							
	20	8 0	35 00	05	095	31	464	2430)				148	41							
			STD QQ	10	014	32	86	2632	2	001707	5 002	7	145	28							
	20	8 01	3s 00	10	014	32	861	2632	2				145	28							
	20	8 01	35 00	15	012	32	851	263	3				145	23							
			STD 00	20	012	2 32	85	263	3	001704	1 004	4	145	22							
	20	8 01	35 00	20	012	32	851	263	3				145	22							
	20	8 0	35 00	25	012	2 32	856	263	3				145	23							
			STD OC	30	012	32	86	263	3	001698	5 006	1	145	24							
	20	8 01	35 00	30	012	32	860	263	3				145	24							
	2 J	8 01	35 00	35	012	32	856	2633	3				145	25							
	20	8 01	35 00	140	012	32	857	2633	3				145	2.7							

IPENCE IO. NO.	CDOF 2HIÞ	LATITU	1/10	LONGITUOE	P Debit	30 UAR		TATIO (G:	MT)	1	EAR	CRUISE NO.	STA1	ION	DEPTH TO BOTTON	OFFT	08	WAVE SEPVATIONS	600	C001		51	100C 100N 100N
1270	SI	6419	2 N	171350w	1.	CE	WATER			20 19 IND SMID OF FOICE	BARO METEL (mbs)	DRY	EMP.		0054 NO. 085. DEPTH	59	O1 ECIAL VATIONS	1 2	×1	3 3			0043
								C	1	508	075	099	0	78 8	10								
	MESSENGE 1144 HR 1/10	ND.	CAR		(m.)	1 %		5 •/	٠.	SIGMA	-1	SMCING VOI		X 10 ₂ S ♥ 0	30	UND OCITY	0; mV	PO 4=P 20 = 01/1	101AL=P		NO3-N yg - 01/1	\$1 04-\$1 Na + 01/1	рН
						100	.		.														
	224		ST			102		151		2421		00371	70	0000		868	654						
	223		085			102		150		2421						868	654						
	223	,	085 5 T		-	101		292		2423		00175	,	0027	_	866 587	656						
	223		085	_		027		291		2621 2621		00175	, 4	0027		587	668 668						
	223		085			020		300		2639						558	656						
		,	ST			019		300	-	2640		001639	a n	0044		555	646						
	223	1	085			019	_	299		2640		00,00		00		555	640						
	223		085			018		298	-	2639						551	645						
		-	ST			019	_	299		2640		001636	5 1	0061		552	643						
	223		085			018		299		2640						552	643						
	223		085			018		298		2640						552	641						
	223		085			018		299		2640						553	641						
	223		085	004	5	017		298	_	2640						553	643						

EFERENCE 10.	SHIP	LATITU	DE 1/10	LONG		N DCT	50U/	ARE		ON T		YEAR	CRU		STATIO	4	1	#1# 10 10M	MAX. OEPTH OF S'MPL"		WAV SERVA	TIONS		HER ODE	CLOU	ES	NO STAT NUA	
31127	51	6510	N	1710	085W		234	51	07	15 (30 1	1968	BS	2 04	4		00	45	00				1 .	< 1	7	1	00	044
1121		0,10	., .					WA			VIND	BAR	1	AIR TE	M7. °C		N	o, T		CIAL	1							
								COLOR	TRANS	OR.	SPEED OB FORCE	M ET	ER	ORY BULB	WET		-9 0	OS. THS		ATIONS								
										16	505	07	5	055	05	8 (0	8										
	MESSENGE FIME HR 1/10	NO.	C AR		DEPTH (m I	ī	70	s	٠/	SIGA	A = 1		OMALT-21		¥ ∆ 0 0 v N. /	w.	SOU VELO		02 ml/		4mP - 81/1	101A		NO3-			ρН
			, 21	' ס	0000)	04	82	33	l 4	262	24	00	1785	8	0000	o `	146	78	659	'							
	039	5	083	5	0000)	0.4	82	33	137	262	24						146	78	659								
	03	5	085	•	0009	5	04	449	33	135	262	28						146		66 l								
			\$1	0	0010)	03	356	33		263	3 7	00	1664	0	001		146		656								
	03	5	085	,	0010)	0.3	356	33	137	263	3 7							26	656								
	03	5	085	;	0015	•	03	301	33		264	+3						146		661								
			51		0020		0.2	95	331	15	264	+4	0.0	1601	9 1	0034	+	146	02	640								
	039	5	085	5	0020)	0.2	95												640								
	035	5	085	•	0025	•		277												621								
			51	D	0030)		277	33	5	264	+5	00	1587	6	0050)	145	96	621								
	035	5	085	,	0030			277												621								
	035	5	085	•	0035	•	0.2	278	33	151	264	-5						145	97	619								

REFERENCE CTOY IO.	SHIP	LATITU	DE 1/10	LONGITUOS	IN DOCTS	M/ 25 SOU	ARE		TION		YEAR	CRU		STAT	ON	7	OEPTH TO BOTTOM	MAX. OEPTH OF S'MPL"	1	WAV ERVA	TION		WEA- THER CODE	CC	DUD DES		5	NODG FATION UMBER
311270	51	6512	N	170405W		234	50	07	15	050	1968	В	52 04	5		C	0046	00				1	X 1	2	4		j	0045
. 511210	, ,,	0,11	,, ,	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,		COLOR COOE	TER	\$ O19	WIND	D MET	O-	AIR TE DRY BULB	_		15.	NO. OBS. DEPTHS	SPE	CIA L A TION S									
									00	500	0.8	0	072	0	1 8	T	08											
	MISSENGI TIME HR 1/10	W HO.	C AS		(m)	7	°		s ·4.	SIG	SMA-1		CHIC VOLU		₹ ∆ NN. X 10	м.	SOL VELO		0 2 m1/l		4-P		01AL-P	NO2		NO3-N yg - 01/1	\$1 O4-\$1 pg = qt/1	рн
																									- 1	ļ		1
				D 000			465		07		21	00	1815	6	000	0		570										
	05		085				465		074		521							70 42										
	05	2	085	5 000 rD 001			396 319		1092 12		530 539	0.0	1642	0	001	7		10										
	05	,	085				319		123		539	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	•••	•		10										
	05		085				295		109		540						146											
		•		002			292	3.3	11	2 (541	0.0	1627	4	003	4	14	500										
	052	2	OBS	002	0	0	292	33	113	2 (541							00										
	05	2	085				289		116		542			_		_		00										
				ro 003			290		12		542	0.0	1623	2	005	Ü		501										
	05		085				290		117		542							501										
	05	2	083	5 003	2	0	289	33	119	2	642						140	502										

FERENCE IT ID.	SMIP	LATITU	Dt 1/10	LONGITUDE	NDC1	50U	ARE		TION IGM	Ti	۲	EAR	CRUISE NO.		ATOR'S	N	1	DEPTH TO DITOM	MAX, DEPTH OF S'MPL'		WAVE SERVATI	ONS	WEA THE	R.	COOE	5	ST.	OOC HOITA RJEML
311270	0 51	6509	N	17011 W	Γ	234		07	15	07	0 1	968	B52				0	046	00	02	1 2		X 1		7 3		0	0046
							COLOR CODE	T -	S. Di	R.	D Office	METE (mbs	R	ORY ULB	WET BULL	co	5]	NO. OBS. EPTHS		CIAL								
									0	0 \$	00	085	5 0	67	05	8 6		08								,	 	
	MESSENGE TIME HR 1/10	₽ NO.	CAR TYP		lm i	1	₹		s •4.	.	SIGMA	A T	SPECIFIC	VOLUA ALT-110		₹ ∆ DYN. X 10	м.	VEFO 200		02 m1/1	PO.		101AL- ug - m1/		0 g = N		04-\$1 g • a1/1	рН
																				7.00		Į						
	0.7	•	ST				463		302 301		261 261		001	8579) (000	0	146		723 723								
	07.		085 085				463 462		301		261							146		730								
	07.	2	ST				437		302		261		001	8318	3 (001	8	146		723								
	07	2	085				437		301		261							146	59	723								
	07	2	085	001	5	0	280	3.	303.	2	263	6							93	655								
			51	D 002	0	0	278	33	344		263	6	001	6749	9 (0U3	6	145		650								
	07	2	085	002	0	0	278	3:	303	5	263	6						145		650								
	07	2	OB 5	002	5	0	276	_	305		263								93	639								
			51				2 7 9		306		263		001	6580) (005	3		96	642								
	07.		085				279		305		263								96	642								
	07.	2	OBS	, 003	5	0.	279	3:	306	3	263	8						145	96	638								

10. NO.	COOF	LATITU	OE 1/10	LONGITUDE TO		SOEH	ı	ON TI		EAR		TATE	ON	OEPTH TO BOSTOM	OF S'MPL	005	WAVE ERVATION		WEA- THER CODE	CLOUG		- 5	NOOC TATION
270	SI	6506	5 N	16941 W	233	59	07 1	5 0	95 19	768	BS2 04	7		0055	00			ı	X4	X 9			004
		0,00	,,,,,,			WAT			VINO	BAR	A 19 11 /			NO.							•	'	•••
						COOL	TEANS.	OIL	SMITO OI FOICE	METI	ORY	W.		OBS. GEPTHS		VATIONS							
								00	500	09	5 053	05	0 0	10									
	MESSENGE TIME HB 1/10	CAST NO.	CARO TYPE	OEFTH (m)	,	τ	s	•/	SIGMA	-1	SMECIFIC VOLU		₹ △ 0 01N. M. 1 103		OCITY	0; =1/1	104-		101AL=P #8 - U/I	NO3-N #8 - et/1	NO3-N #8 - #1/I	\$1.0a=\$i 29 - et/1	9.1
		1	STO	0000	0	514	330	1	2611	۱ ا	001912	9	0000	14	689								1
	097	,	085	0000		514	330		261		001/12	•			689								
	097		0BS	0005		511	330		261						689								
	٠,,		STO			511	330		261		001908	4	0019		690								
	097	,	085	0010		511	330	_	261					_	690								
	097	7	085	0015	0	468	330	23	261	7				14	673								
			STE	0020	0	298	329	8	2630)	001731	4	0037	14	601								
	097	,	OBS	0020	0	298	329	82	2630)				14	601								
	097	7	OBS	0025	0	279	329	84	2632	2				14	594								
			STO		0	265	329		2633		001702	0	0054		588								
	097		OBS	0030		265	329		2633						588								
	097	7	OBS	0035	0	258	329		2634						586								
	097		0 B S	0040		260	329		2634						588								
	097	7	085	0045	0	262	330	00	2635	•				14	590								

CTEP	IO.	SHIP	LATITU	OE 1/10		GITU OE	PODE	\$00 \$00	ARE	-	TION		YEAR			STATI	ON	-	OEPTH TO BOTTOM	DEPTI OF S'MPL	+	OBSE	VA VE		WEATHER	C	2100	1	5	DOOC TATION
31	1270	SI	6504		169	911 W	1	233	59	07	15	121 1	968	+	52 04	8			0052	00	_		ic n	0	+	+	9	-		0048
									COLOR		2 019	SMIO OI FOICE	BAR MET Imb	ĔR	ORY BULB	W BU	27	VIS.	NO. OBS. OEPTHS	01587	ECIAL VATIO	N S								
											00	500	09	5	050	04	+7	0	10			Ι.								
		MEISENG TIME HR 1/1	CAST NO.	C.A.		DEFTH	(m)	7	τ		٠4.	SIGA	1-A	SMI	CIFIC VOL	U M E I 107		1. 2 .		UND	01,	*1/J	104-		101AL-P		3=N - et/1	NO3-N #9 = 8//1	\$1 Oa+\$1 #9 - at/l	,,
					TD	000			465		98	261		00	01885	5	00	00		669										
		12		08		000			465		981 977	261								6 6 9 670										
		12	1	08	5 T0	001			466 421		99	261 261		^	01838	7	00	10		652										
		1.2		08		001			421	-	996	261		01	01000	,	00	17		652										
		12		08		001			333		995	262								616										
		12	1		TD	002			264	-	99	263		0.0	01697		00	36		586										
		12	,	08		002			264	,,,	,,	20.	, ~	•	0107,	٠	v	,,,		,,,,										
		12		08		002			235	3.2	983	263	15						14	575										
			•		T D	003			224		98	263		0.0	01676	.6	00	53		570										
		12	1	08		003			224		978	26:		•		-				570										
		12		08		003			224		979									571										
		12		08		004			224		976									572										
		12		ОВ		004	5		222		979	263								572										

CTET IO.	SHIP	LATITU	DE 1/10	LONG	1/10	POCTE	\$QU 10°	ARE		TION IG MT		YEAR	CIU		STATE NUM	ON	-	08PTH 10 80110#	DEP 0 5'MJ	t H	0158	VA VE		WIA THER CODE	CC	OUB DES		5	NOOC TATION IUMBER	
311270	SI	6503	1N	168	417W		233	58	97	15	146	1968	В:	52 04	9		ļ	0051	10	0			0	X4	l x	9		1	0049	
								WA	IER		MIN O	BAR	٥. ا	AfR TE	MP.	ς	VIL	NO.		PECIAL										
								COFO	TRAN	D OR	1010	7.1		DAY	W BU		000	OBS. DEFTHS	0.000	EVATIO	NS									
										00	+	09	5	060	0	53	0	10	 		\neg									
	HESSINGE TIME HE 1/10		CAR		DEPTH	(m l	,	τ	,		sic	A-T		CIFIC VOLU		011	∆ 0. 103		OCITY	0,	m I/I	10		107AL-P	NO:		NO3=N ## - #1/1	\$1.04+5- #4 + 01/1		
ļ			ST	0	000	0	. 0	588	32	99	26	01	00	2009	9	00	00	14	719	73	.7		1							į
	146	,	085	,	000	0	0	588	32	994	26	01						14	719	73	7									
	146	1	085		000	5	0	587	32	998	26	01						14	720	74	0									
			ST	0	001	0	0	586	33	00	26	01	0 (2007	3	00	20	14	720	73	13									
	146	,	085	,	001	0	0	586	32	996	26	0.1						14	720	73	3									
	146)	085		001		0	411	33	027	26	23						14	649	71	8									
			ST	0	002	0	0	284	33	01	26	34	00	1697	9	00	39	14	595	69	4									
	146	•	085		002	0		284		J 1 1	26	34							595	69	4									
	146)	085		002	5	0	271	33	∪19	26	35						14	591	65	5									
			5 T	٥	003	0	0	280	33	U5	26	3 7	00	1665	7	00	55	14	596	63	6									
	146		085	1	003	Ü	0	280	33	U50	26	37						14	596	63	6									
	146		085	,	003	5	0	285	33	070	26	38						14	599	62	8									
	146	1	085	,	004	0	Q	286	33	J75	26	39						14	600	62	8									
	146	,	085	,	004	5	0	284	33	069	26	38						14	600	62	8									

NO. CODE 1/10 1/18 2 10 1 MD DAT NELT/10 NO. NUMBER BOTTOM STAPLES DAR NOT THE AUT NUMBER NO. NUMBER BOTTOM STAPLES DAR NO. NUMBER BOTTOM STAPLES DAR NO. NUMBER NO. NUMBER BOTTOM STAPLES DAR NO. NUMBER NO. NO. NUMBER NO.	REFERENCE	→ SHIP	LATITU	DE	LONGITUDE		, RSDEN QUARE		TION T		TE AR	CRUISE	SINAT			TO	DEPT	1.	WAVE ERVATIONS	W E.		CLDUD			NODE
WATER WIND SARD COOK TANNA DER TOOK COOK TANNA DER TOOK		COOL		1/10		10 F L	0* 1*	MDI	DAY	R.1/10					BC.	MOTT		S DW.	HGT PIRES	COL	30	TH AV	7	N	UMRER
MATER WIND SAN AND THE COLOR FAM OR OR OR OR OR OR OR O	31127	0 51	6458	4 N	168115w	2:	3 48	07	15	170 1	9 6 8	BS2 C	50		04	046	00			1 X4		x 9			0050
MISSINGS CARD MISSINGS CARD MISSINGS CARD MISSINGS MISSINGS MISSINGS MISSINGS CARD MISSINGS MISSINGS							WA	ATER	٧	VIND		A 10	TEMP.				5.0	CIAL							
No.								DIR.	09				v€⊺ c	and '											
STD 0000 0672 3249 2550 0024902 0000 14746 719 172 085 0005 0672 32487 2550 14746 719 172 085 0010 0666 3254 2555 0024444 0025 14746 769 172 085 0015 0545 32868 2556 14746 769 172 085 0015 0545 32868 2556 14746 769 172 085 0015 0545 32868 2556 14703 723 14703 723 172 085 0020 0450 3292 2610 0019216 0047 14665 679 172 085 0025 0438 3292 2612 0019054 0066 14661 676 172 085 0030 0436 3292 2612 0019054 0066 14661 676 172 085 0030 0436 32912 2612 0019054 0066 14661 676 172 085 0030 0436 32912 2612 14661 676 172 085 0035 0436 32912 2612 14661 676 172 085 0035 0436 32913 2613 14662 665 14661 676 172 085 0035 0436 32913 2613 14662 665 14661 676 172 085 0035 0436 32913 2613 14662 665 14661 676 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 085 0035 0436 32913 2613 14662 665 172 0456 0456 0456 0456 0456 0456 0456 0456 0456 0456 0456									00	500	10	0 042	0	42		09									
172		TIME	S NO.			(m)	1 6	s	٠4.	SIGM	A =1			OYN.	Μ.			D2 ml/l							pМ
172																			İ		İ				
172 085 0005 0672 32484 2550 14747 717 STD 0V10 0666 3254 2555 0024444 0025 14746 769 172 085 0010 0666 32540 2555 14746 769 172 085 0015 0545 32868 2596 14703 723 STD 0V20 0450 3292 2610 0019216 0047 14665 679 172 085 0020 0450 32915 2610 14665 679 172 085 0025 0438 32920 2612 14661 679 STD 0V30 0436 3292 2612 0019054 0066 14661 676 172 085 0V30 0436 32919 2612 14661 676 172 085 0V30 0436 32919 2612 14661 676 172 085 0V30 0436 32919 2612 14661 676				ŞT	0000)	0672	32	49	255	0	00249	02	000	0	14	746	719							
STD OU10 O666 3254 2555 O024444 O025 14746 769 172 OBS O010 O666 32540 2555 14746 769 172 OBS O015 O545 32868 2596 14703 723 STD OU20 O450 3292 2610 O019216 O047 14665 679 172 OBS O020 O450 32915 2610 O19216 O047 14665 679 172 OBS O025 O438 32920 2612 O19054 O66 14661 676 172 OBS OU30 O436 32912 2612 O19054 O066 14661 676 172 OBS OU30 O436 32919 2612 O19054 O166 O167 172 OBS OU30 O436 32919 2612 O19054 O166 O167 172 OBS OU30 O436 32931 2613 O167 O167 O167 174 OBS OU35 O436 32931 2613 O167 O167 O167 175 OBS OU35 O436 32931 2613 O167 O167 O167 175 O167 O167 O167 O167 O167 O167 O167 176 O167 O167 O167 O167 O167 O167 O167 177 O167 O167 O167 O167 O167 O167 O167 O167 O167 176 O167		17	2	085	0000)	0672	32	487	255	0					14	746	719							
172		17	2	OBS	000	5	0672	32	484	255	0														
172 085 0015 0545 32868 2596 14703 723 5TD 0020 0450 3292 2610 0019216 0047 14665 679 172 085 0020 0450 32915 2610 14665 679 172 085 0025 0438 32920 2612 14661 679 5TD 0030 0436 3292 2612 0019054 0066 14661 676 172 085 0030 0436 32919 2612 14661 676 172 085 0035 0436 32931 2613 14662 665				ST	0010)	0666			255	5	00244	44	002	5			-							
STD 0020 0450 3292 2610 0019216 0047 14665 679 172 0BS 0020 0450 32915 2610 14665 679 172 0BS 0025 0438 32920 2612 14661 679 STD 0030 0436 3292 2612 0019054 0066 14661 676 172 0BS 0030 0436 32919 2612 14661 676 172 0BS 0035 0436 32931 2613 14662 665																									
172		17	2								-				_										
172 OBS 0025 0438 32920 2612 14661 679												00194	16	004	+ 7										
STD 0030 0436 3292 2612 0019054 0066 14661 676 172 0B5 0030 0436 32919 2612 14661 676 172 0B5 0035 0436 32931 2613 14662 665					_													-							
172 085 0030 0436 32919 2612 14661 676 172 085 0035 0436 32931 2613 14662 665		17	2		_																				
172 OBS 0035 0436 32931 2613 14662 665												00190	154	006	6										
172 OBS 0040 0435 32928 2613 14662 659				OBS			0436											665							

REFERENCE	SHIP	LATITU	DE	LONGITUDE	M DC 3	W/ 25 50U		STA	TION	TIME		AR	CRUISE	RIGIN.	ATDR'		-	DEPTH	DEPTH			AVE VATR	ons		EA-		DUD			NODC
187 ID.	CODE	•	1/10	1/10	٥Ĭ	10*	1.	MO	YAG	HR,1/	110		NO.		UMB		80	MOTE	S.WSF	S DIR	н	GT FILE	St	c	BDE	TYPE	AMT		_ \	UMBER
31127	0 51	6458	7 N	167535W		233	47	07	15	19	0 19	968	B 5 2	05	1		00	047	00				2	,	(4	X	9	ĺ		0051
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0.70					WA		1	WIN	D	BARC		IR TEA		VIS	. T	ND.		CIAL	٦									
						- 1	COLOR	TRAN		L	0	M ETE		DRY ULB	W E	cor	nd !	OBS. EPTHS		ATION	5									
						1			+		0101		-		05		+,	08			\exists									
						$\overline{}$		<u> </u>	00	S	00 [10	2 1 0	66	-05		٠,	08.1			1		-		_		-			_
	MESSENG	CAST NO.	CARD	DEPTH (m)	1	℃	1	٠4.		SIGMA	-1	SPECIFIC	VOLU	M.F	E A	м.	SDU		D ₂ m	и.	PD 4	- 1	1014 ug -		NO ₂		NO3-N	SI D 4-54	
	HB 1/1					ļ		↓_	•	\perp		_				x 10 ³	'	****	30111		_	×0 - 1		70.	***	νg -	01/1	0 + at/l و ي	μg - α1/(
								1									-				- 1						- 1			
			ST	0000)			32	19																					
	19		085	0000			7210				2520																			
	19	6	OBS	000			735		180		2518							14												
			\$T				557		53		2567		002	326	5				702											
	19		OBS	0010			557		526		2567								702											
	19	6	OBS	001			417		746		2600				_				648											
			ST				396		73		2601		002	008	3				640											
	19	-	085	0020			396		730		2601								640											
	19	6	OBS	0029			156		653		2615				_				535											
			ST				147	_	66		2616		001	867	9				532											
	19	6	08\$	0030)		147		656		2616	•							532											
							145		653		2615								532											

CTET ID.	SHIP	LATITUE	DE	LONGITUDE	Delift OCTR	500			TION IG MT		YEAR	ORIG:		OR'S TION			MAX. DEPTH	085	WAVE ERVAT		WEA		000			NDDC
COOL NO.	COUL	•	1/10	. 1/10	3	10*	1.	MO	DAY	HR,1/10		ND.		M RER	RO1	MOT	MPL	DIA.	HGT PE	9 51	COD	ETP	I AM	7	N	UMBER
31127	0 51	64588	BN	16743 W		233	47 WA			205 1	968	A 19 7	52 EMP.		00	39	00				2 X4	Х	7			0052
							COLOR	TEAN'	S DIR.	SPEED	MET	ER DRY		VET CO	2 0			ATIONS								
									00	\$00	10	4 053	0	50 1	0	7										
	MESSENG FIME HR 1/10		CAR Type		(m.)	Ť	Έ	,	٠4.	SIGM	A-1	SPECIFIC VOI		₹ △ DYN, x 10	M.	SOUN		02 ml/l	PD.		101Ai- #g + el/		2-N	NO3-N 99-011	\$1:04-\$1 pg = etcl	рН
			ST	D 000	0	0	927	30	99	239	7	00395	28	000	0	148	26	640								
	20	7	085	000	0	0 '	927	30	990	239	7					148.	26	640								
	20	7	085			0	713		204							1476		692								
			ŞT			0.	688		28	253		00266	76	003	3	147	52	701								
	20		QBS			0.	688		278							147		701								
	20	7	085				436		539							146		862								
			ST	0 002	0	0	113	32	67	261	9	00183	• 9	005	6	145	15	828								
	20	7	OBS	002	0	0	113	32	672	261	9					145	15	828								
	20	7	OBS	002	5	0	109	32	667	261	9					145	14	830								
			ST	D 003	0	0	109	32	68	262	0	00183	2 (007	4	145	15	830								
	20	7	OBS	003	0	0	109	32	675	262	0					145	15	830								

REFERENCE TRY IO.	SHIP	LATITU	DE 1/10	LONGITUDE	CABIT M DC 18	\$QUA	A.R.E.		TION T	1ME	YEAR			ATOR'S		OEPTH TO BOTTOA	DEPT: OF S'MPL	085	WAVE ERVATIONS	THER CODE	CLOUD		51	AOOC ATION UMBER
311270	12	6459	5N	16734 W		233	WA	ER		215	BAR	٥. ا	S 2 05	MF. C	vis	0035 NO.	SP	CIAL		1 X4	х 9			0053
						-	CODE	TRANS	DR.	500	į (mbi	,	084 BULB	055		0EPTH1	OBSER	VA TION S						
	MESSENG TIME HR 1/10	CAST NO.	CARD	DEPTH	(m.)	T	°C	5	100		MA-T	3 PE	CIFIC VOLU	w1 .	E △ D 2YN, #	50	UNO OCITY	02 m1/1	PO4-P #8 = 01/1	TOTAL P		NO3-N vg + 81/1	\$1 Oz-\$1 µg + #1/1	рН
	21	R	ST(000			923		13 126		30 30	00	04589	4 (000		813							
	21	8	OBS STI	000	5	06 04	90	32 32	358 49 486	25 25	38 72 72	0	02284	2 (034	14	752 674 674							
	21	8	085 ST0	001	5 0	02	222	32 32	619 62 616	26 26	0 7 0 7	0 (01946	3 (056	14 14	562 561 561							
	21 21		085	002			216		622		08						561							

CTB7	IENCE ID. NO.	SHIP	LATITU		LONGITU	DE 1/10	NOCT	50U	ARE		TION T		YEAR	•	CRUISE NO.		ATOR'S TATION		H1930 C7 C1108	100	М	011	WAVE	10 NS	WE-	e	CODE	5		NODC STATION NUMBER
-+	1270	SI	6500	1/10 5 N	16725			233	5.7 WA	0.7	15	WIND	196	A RO	BS2	_	4		0024 NO.	0				1	X 4	_	7 8	-	Ì	0054
									COLOR	TEAN	-	1010	1 0	eter mbel	- 8	ULB	BULB	COD	DEFIN	0#5€	RVA TI	SNC								
		#4555%G TIME H& 1/16	CAST NO.	CAI		th v	٦)	,	٣	1	-/	SOO	MA-1	17	SPECIFIC	64 VOLUI		* 103		UND OCITY	02	m I/I	PO ve	6=P 61/1	101A L- -pg - 81/		02-N 2 - ot/l			
		23 23		08:	s 0	000 000 005	,	09	922 922 551 264	29 32	52 519 233 36	22 25	83 83 45 83	ı	005	039		0000	14	805 805 695 576	6 7	56 56 40 96				ı		1	ı	ı
		23 23		0B:	s o	010)	0;	2 64 258	32	361 369	25	83							576 575		96 01								

EFFERENCE SHIP CODE . LATITUE	1/10 * 11)E 30 50	SDEN UAPE	M0 0.7	+	206 VINO	7	BS 2	N	TATION LUMBER	VIL	DEPTH TO BOTTOM OQ 2 Q NO. OBS, DEPTHS	OO SPE	D/R.	WAVE SERVATIONS INGT REE SE	1459	17P1 A 4	5	5' N	OOC ATION UMBER	
MESSINGE CAST TIUT OF NO.	CARD DEP	Thi limi	3 1	5	24	1	11 MA-T	SPECIFI	73 C VOLUM	. D	7 N D N 10 ³	30	JND DCITT	02 ==1	PO4=P 22 × cl 1		NO2=N	NO3-N		, дн	000
007 007 007	08S 00 08S 00 STD 00	000 (005 (010 (0885 0885 0749 0393	29 30 31	94 937 809 68 681	23 23 24 25 25	21 08 18		6750 27951)))))	14 14 14	796 796 756 623						1		1 '

CIET IO.	CODE	LATITU	1/10	LONGITUDE	ONDC 18	SQUAR	E		GMT	IME	YEAR	CRUIS		ATOI STATE) N	_	DEPTH TO OTTOM	DEPT OF S'MPL	1 0		VE ATIONS	WEA THER CODI	COOF	5	5	ATION UMBIR
31127	0 51	6535		168105W	\vdash	233 5	58 (WAT	07	17		77.5	0+ EA	DRY BULB		1 0	VIS.	NO. OBS. OPTHS	00		1	1-1-	3 X2	1	1		0056
									18	\$20	12	5 (080	0.7	8	6	07	<u> </u>		L			,	+	,	
	MESSENG TIME HR 1/1	M NO.	CARC		m I	1 7	C	5	٠4.	SIG	T-AM		PIC VOLU		₹ / 01N x	, M.		DCITY	02 ml		PÖ4=P g = 81/I	TOTA ()7		NO3=N ug = 61/I	51 O a = Sr yg + e1/1	ěн
										Ι																
			ST			081		30		23	-	00	4294	8	00	00		773								
	10		085			081			311	23								773								
	10		OBS			084			968	24								795								
	10	4	085			084			162	24				_				798								
			ST			084	42	31;		24	26	00	3668	9	00	40	14	798								
	10		085				_		324																	
	10	4	OBS	001	7	083			427	24								797								
			ST	0 0020)	079		31		24		00	3393	2	00	75		786								
	10	4	085	002	5	075	52	31	564	24	67						14	770								
	10	4	085	002	5	060	3	31	732	24	99						14	713								

REFERENCE SH			LONGITUDE	PUBLIF		ARE		TION T		YEAR	CRUI		STATIO)N	_	DEPTH TO OTTOM	DEPTH	08	WAVE	10 N S		HER ODE	CODES		5*	ATION UMBER
006 NO.		1/10	1/10	4-	10*	1.	MO	DAY	HR, 1/10		- NO	<i>'-</i>	NUMB	Ł R			SIMPL	S DIR	HGFPE	R 5	EA .		TTPE AM	-		
311270 S	6535	1 N	168184W		1233	58	07	17	111	1968	BS	2 05	7		lo	048	00				2 I.	X 4	7 8		- 1 (0057
311210 3	. 000.	214	10010		~ ~ ~ ~	WA		T	WIND	BAR	o- L	AIR TE	MP. T		vis.	NO.	Le	CIAL								
						COLOR	FRANS (m)	OIR	SPEE OR FORC	MET	ER	DRY	W.E	T (c	one	OBS. EPTHS		A TIONS								
								20	514	12	5	079	07	7 (5	09										
MESS TI HR	NGE CAST	CARC		(m)	,	2	5	٠/		MA-1		IFIC YOU		₹ ∆ DYN	M.		DOLLA	02 ml/	10.		1014		NO2-N ug + ot/l	NO3-N	\$1 O4~\$1 pg = 01/1	рМ
							1		1																	
1	'	ST	ססס ' ס	0	. 0	880	31	52	24	45	00	3491	7	000	00	14	815	717	,							
	16	085	000	0	0	880	31	518	24	45						14	815	717								
	16	OBS	000	5	0	877	31	516	24	45							814	738								
		ST	D 001	0	0	876	31	54	24	47	00	3473	3	00	35	14	815	735								
	16	085	001	0	0	876	31	537	24	47						14	815	735								
	16	085	001	4	0	808	31	522	24	56						14	789	754								
	16	085	001	9	0	701	32	260	2 5	280								680								
		ST	0 002	0	0	697	31	55	2.4	•73	0.0	3226	3	00	68	14	747	679								
	16	085	002	3	0	663	31	560	24	78						14	734	675								
	16	OBS	002	8	0	528	32	146	2 5	41						14	688	719								
		ST	D 003	0	0	496	32	27	2 5	554	00	2454	5	00	97	14	677	742								
	16	085		3	0	446	32	402	2 5	70							658	772								
	16	085		8	0	357	32	514	2 5	88						14	623	809								

EFERENCE FBY IO.	SHIP CODE	LATITU	DE 1/10	LONGITUDE		SDEN JARE		ION T		YEAR		ATOE)N	OEPTH TO BOTTO	1 0	AAX, EPTH OF APL'S	OB	SERV	A TIQ		WEA- THER CODE	CC	OUD DES		5	NODG *ATION LUMBER
311270	si	6535		.6826 W	233		07	17	130 WINO	BAR		MP. 1	VIS	0048 NO.		O O	_19	1	2		X 2	1	8			0058
						COLOR	TRANS	DIR	SPEED OB FORCE	Imb		BU	T COD	DEPTH	5 08	SERVA	TIONS									
							ļ	20	515	12	5 078	07	2 7	09	╧			<u>. </u>		_					_	
	MESSENGE TIME 0 MR 1/10	CAST NO.	CARO	DEFTH 6	.,	2 1	5	٠/	SIGA	4 A - 1	SPECIFIC VOLU		2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	,	LOCI		02 m1/		PO 4-		101AL-P µg + e1/1	NO:		NO3-N vg - 01/1	51 O 1 - 21	рΗ
			STO	0000	0	692	32	35	25	36	002620	6	0000	14	475	3										
	130		085	0000	0	692	32	346	25	36				14	475	3										
	130		085	0005	0	690	32	354	25						475											
			STO	0010	0	691	32	36	25	37	002611	6	0026		475											
	130		085	0010	0	691	32	358	25	37				1 4	475	4										
	130		OBS	0015	0	387	32	647	25	95				_	463											
			ST	0020	0	267	32	64	26) 5	001968	8	0049	14	458	3										
	130		085	0020	0	267	32	635	26)5				14	458	3										
	130		OBS	0024	0	255	32	639	26	06				14	457	8										
	130		085	0029	0	251		646						_	457											
			ST	0030	0	250	34	65	26	7	001947	7	0069		457											
	130		OBS	0034	0	248	32	645	26	7 C				_	457											
	130		OBS	0039	0	248	32	644	26	7 0				14	457	8										

REFERENCE 197 IO.	SHIF	LATITU		LONGITUO	12 ;	sar	SOEN		TION T		TAF	CIL		STATI)N	1011	٥	MAK. GEFTH OF		WAV SEPVA	TIONS	THER	00	0015		ST.	ODC ATION
00 NO.			1/10		/10	10*	1.	MO	M YAO	(4,1/10)		→ N	10.	NUMI	ER.		-	S'MPL'S	018.	HGT	FBR 51		TYPL	A Apr T			metr
311270	l sı l	6535	N	16833	Bw	233	58	07	17 1	140	1968	B:	52 05	9		00	58	00	21	2	3	X 2	7	18	1	- 1 0	059
							$\overline{}$	TER	+	VINO	BAR		AIR TE	MP. 1	· vn	NO		5980	lA1								
							COLOR	TRANS	OR.	5410 01	1		BULB	NI NU	1 000	e e e		OBSERV.									
									23	522			078	07	1 7	0	9										
	MESSENG 11ME HR 3/10	M NO.	CAR 1TP		TH imi		τ	s	٠/	\$1G	M A T		CIFIC YOLU		₹ △ 0 7 N. A 10 ³	w. ,	SOU!		02 #1/		4=P - e1/1	101AL=P ## * 61/1			HO3−H HB + et/I	\$1 O 4 \$1 #4 + 41/1	рН
																								Ī			
			\$1	01	000	0	664		58	25		00	02410	0	0000		147		742								
	14	3	089		000		664		581	25							147		742								
	14	3	083	_	005		663		584	25							147		748								
			51		010		646		72	25		0 (02289	0	0023		147	_	767								
	14		085		10		646		715	25							147		767								
	14	3	089		115		289		751	26							145		765								
			51		020		243	-	74	26		0 (01870	1	0044		145		795								
	14		089		20		243	32	741	26	15						145	74	795								
	14	3	089		25		238							_	0011			7.0	7								
			S1		030		234	32		26		0.0	01868	9	0063		145		797								
	14	-	083		30		234		734	26							145		797								
	14		089		34		226		715	26							145		800								
	14	3	083	5 00	39	0	226	32	733	26	16						145	69	802								

EFFEREN CODE N	O. COO		OE 1/10	LONGITUOE	Pode	*A, 21 SOU	ARE		ION T		YEAR		STAT	ION	01PTH 10 80110M	OEPTH OF S'MPL"	0#5	WAVE ERVATIONS [HGT/FET] SS	5001	COOLS]	51	NODE PATION UMBER
3112	270 SI	6535	N	168410w		233	58 WAI COLOR COOL	12	,	154 1 VIND SHED OF FORCE	968 MET MET	ER ORT	MP.	71 VIL	NO. OBS. OEPTHS	598	L 18	2 2	x 2	7 8			0060
						,		<u> </u>	18	\$20	12	5 078	0	72 7	10	L,		,	,				
	MESSER TIM HR 1/	WO.	CAL		(m)	7	₹	s	٠/	SIGM	A - T	SMCINC VOLL		₹ ∆ 0 0YN, M ¥ 10 ³		OCITY	07 #1/1	PO4=P >8 - e1/i	101AL-P #8 - #1/1	NO7=N #g = at/1	NO3-N ug - et/l		pM
		1		TD 000	0		625	329	0.6	259	2	002081	3	0000	14	734	•						
	1	58	08:				625		957	259		002001	-	0000		734							
		58	08:				622		959	259						733							
	_	_		TD 001	0	0	620	329	96	259	4	002075	8	0021	14	733							
	1	8 6	08:	5 001	0	0	620	329	958	259	4				14	733							
	1	5.8	08:			0	287		781	261						593							
			S.	TO 002			266	32		261		001871	2	0041		584							
		8	08				266		763	261						584							
	1	8	083				266		756	261						585							
				TD 003			265	32		261		001876	0	0059		585							
		5.8	08:				265		756	261						585							
		58	08:				262		764	261						585							
		8	083				259		765	261						585							
	1	5.8	083	5 004	5	0	262	32	759	261	5				14	587							

-	ENCE	SHIP	LATITU	. n.	LONG	11101	100	97.35 SQUA			TION T		YEAR	_	ORIGIN	_		Ţ	GEPTH TO	MAE, GEPTH			VATIO	ONS	WEA		000			HODE	1
100	10. NO.	CODE		1/10		17/10	Z č	10*				HR,1/10		CRUISI NO.		STATI NUM		81	OTTOM	OF S'MPL"			CT FEE		con		I A M			UMBER	
31	1270	SI	6537	2N	1685	57 W		233	58	07	17	172	1968	8.5.2	06	1		0	051	00	1:1	7 2	2 2		X4	X	9			0061	
									WAT	E R		WIND	BAR	o. L	AIR TE	MP.	c v		NO.	SPE	CIAL										
									C000	TEAMS	012	TOTAL	M ETI		ORT BULB	W U	1º CC	ne	OBS. EPTHS	OBSERV		S									
											17	514	12	5 0	78	0	5 2		09												
		MESSENG TIME HR 1/10	M NO.	CAT		GEPTH	(m I	1	τς	5	٠/	SIGA	A 4 - T		C VOLU		₹ ∆ ovn. x lo	M		OCITY	02 m	1/1	PO4-		(0 t A L = # + # + + + 1/1	NO:		NO3-N vg - e ^{1/1}	51 0 a = 51 #8 = 41/1	gN	
																						Ī									
				S	10	000	0	05	36	33	02	26	9	001	929	4	000	0	146	599	804	2									
		1.7	4	083	S	000	0	0 5	36	33	023	260	39							599	802										
		17	4	08	S	000	5	05	36		019									599	81										
				S	۲O	001	0	0.5	35	33	02	260) 3	001	933	8	001	9		700	81										
		1.7	4	08:	S	001	0		35		017	26							_	700	81										
		17	4	08:		001			12		021	26								591	794										
					TD	002			18		04	26		001	706	7	003	8		510	718										
		17	4	00	5	002	0		318		037		3 3							510	718	3									
		1.7	4	08	5	002	5	0.2	80	33	064	26	38						145	595	664										
				S	T D	003	0	0.2	0.89	33	J6	26	38	001	1656	6	005	4	145	596	65	5									
		1.7	4	08	5	003	0	0.2	90	33	062	26	39							596	655										
		1.7	4	08	S	003	5	0.2	277	33	070	26	39							596	65										
		1.7	4	08	5	004	0	02	66	33	072	25	4 J						145	592	59	4									

REFERENCE SHIP	LATITUO	DE LO	NGITUDE 500	10' 1'	STATION TIN	YEAR		ATOR'S TATION SUMBER	OEPTH TO BOTTOM	DEPTH OF S'MPL	OBSE	WAVE EVATIONS HGT PER SEA	WEA- THEF CODE	CLOUG CODES		S1	ODC ATION UMBER	
311270 SI	6527					97 1968	 		0053	00	1	3		X o			0062	
1 3112701 31	0321	/14 1 10	17000	WAT		ND BAR	O- ARTEA	UP. TC	NO.		CIAL		, ,,,,		*	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
				COLOR	TRANE OIR.	OR IMB		BULB CO	OBS. DEPTHS	OBSER	VATIONS							
					17	522 12	5 069	067 4	10									
MESSEN	CAST	CARO	OFFTH (m)	1 %	5 -4.	SIGMA-T	SMCIFIC VOLU	ME & A C	SOL	ONL	02 ml/l	PO4=P	TOTAL-P	NO2-N	NO3-N	51051		5
HR 1/1	NO.	TYPE	DEFIN (M)	, ,	,	31GMA=1	ANOMALT-EN	x 10 ³	, AFFC	CITY	02 401	pg = 91/1	FB = 61/2	μ g = 01/1	yg = 01/1	μg = φI/1	p H	c
20		STD	0000	0504	3298	2609	001928	4 0000		685								
20 20		OBS OBS	0000 0005	0504 0503	32978 32968	2609 2609				685 685								
	•	STD	0010	0503	3298	2610	001925	3 0019		686								
20		OBS	0010	0503	32982	2610				686								
20	0	OBS STD	0015 0020	0411 0249	32988 3298	2620 2634	001693	7 0037		649 580								
20	0	OBS	0020	0249	32980	2634	001075			580								
20	0	OBS	0025	0246	32998	2636	20.425	2 005		580								
20	0	STO OBS	0030	0244 0244	3299 32986	2635 2635	001685	7 0054		579 579								
20		OBS	0035	0241	32992	2636			149	579								
20		OBS	0040	0240	32971	2634				579								
20	0	OBS	0045	0241	32999	2636			14	581								
REFERENCE	LATITUT		NGITUOL 58	SOUARE	STATION TIA	1E YEAR	ORIGIN		DEFTH	DEPTI		WAVE ERVATIONS	WEA-	CLOUD			NOOC	
COOR NO. COOR		1/10	1/10 E		MO OAY HR			FATION FUMBER	90110M	S'MPL		HGT PER 11	CODE	TTPL AM			PREMU	
311270 SI	6529	1N 16	9172W	233 59 0	07 17 2	11 1968	BS2 06	3	0046	00		1 3	3 X4	X 9			0063	
31127				WAT	ER WI	NO BAI		V15	NO.	SP	ECIAL							
				COLOR	TRANS DIR.	SPEED MET		BULD CO	DEPTHS		VATIONS							
					18	522 12	0 072	068 0	09									
MESSENO	I CAST	CARD					SPECIFIC VOLU	ME SA	501	UNO		104-1	TOTAL-P	NO2-4	NO3-N	5105		1
HR 1/1	M NO.	TYPE	OEPTH Imi	1.5	\$ 1/4.	SIGMA-T	ANOMALT-1	07 DIN. 7	M. VELO	OCITY	02 ml/1	μ⊕ = 81/1	44 - 61/1	ug - ot.	μg - a1/1	μg - α1/I	pН	c
																		\prod
,	' '	STD	0000	0540	3300	2607	001950	3 0000	14	700	782							
21		OBS	0000	0540	33001	2607				700	782							
21	3	OBS STD	0005 0010	0539 0539	32997 3300	2607 2607	001953	2 0020		700 701	793 795							
21	3	OBS	0010	0539	32997	2607		- +		701	795							
21	3	OBS	0015	0539	32997	2607				702	806							
21	2	STD	0020 0020	0342 0342	3301 33012	2628 2628	001746	4 0031		620 620	740 740							
21 21		085	0025	0275	33004	2634				592	683							
		STO	0030	0258	3300	2635	001684	4 005		586	678							
21		08S	0030	0258	33002 32999	2635 2635				586 585	678 673							
21 21	-	OBS	0035 0040	025 4 0255	33001	2635				586	669							
	_																	
REFERENCE			-5	1 SDEN	STATION TIA		ORIGIN	ATOR'S	DEPTH	DEPT		3VAW	WEA-	Cronp			NODC	
CODE NO. CODE	LATITUI	1/10	NGITUDE BA	SQUARE	IGMTI MO I DAY HR	1/10 YEAR	CRUISE S	TATION NUMBER	80110#	0.0	000	ERVATIONS	CODE				TATION	
311370 61	4621						85206	1,	0050	1				7 9	1		0064	
311270 SI	00311	04 10	9720JWI I	2 3 3 15 9 10 WAT	ER W	IND BAI		MP. C	0050 No.	١,,	ECIAL	1 1 3	, , , , 4	, , , ,	*	1	0064	
				COLOR	TRANS DIR.	OF the	TER ORY	WET CO	DEPTHS	OBSER	VATIONS							
						520 12		065 5	09									
MESSING	, , , , ,	CARD		<u> </u>			SPECIFIC VOLU			UND		PO4-P	1011	NO2-N	NO3-4	SI C4=5-		5
TIME HB 1/1	CAST NO.	TYPE	OEPTH (m)	1 10	5 %.	SIG M A T	ANOMALT-1	DYN. x 10		OCITY	0 2 m l/1	29 - 011)	101AL=P		NB + 0,	NS - 01/	p H	ć
	T								1								1	
1	, ,	STD	0000	0519	3300	2609	001928	8 000		691	'							
22		OBS	0000	0519	32999	2609				691								
22	7	280 STD	0005 0010	0517 0517	32997 3300	2609 2609	001927	6 001		691 692								
22	9	OBS	0010	0517	32999	2609		• •		692								
22	9	OBS	0015	0477	33008	2615				677								
22	٥	STD	0020	0270 0270	3300 33000	2634 2634	001695	0 003	-	589 589								
22		085	0025	0265	32988	2633				588								
		STO	0030	0264	3298	2633	001702	7 005		588								
22		08S 08S	0030 0035	0264 0261	32984 32988	2633 2634				588 588								
22 22		085	0040	0259	32989	2634				588								

FERENCE	SHIP				-		SOEN	STA	TION	IME			ORIGIN	ATOR	3	\Box	DEPTH	M A OEP1		WAVE		T	WEA-		ouo			400C
10. NO.	COOL	LATITU	JOE 1/10	LONGITUDE	30	10*	TY	WO 1	IGAT	HR,1/10	YEAR			STATK		٦,	01 10	1 0		THE T			CODE		DOES		S1	ATION
+	+		_		-	1	+					+-	-			+	_	1	$\overline{}$	+-+-	+	`^		1	+-	-		
11270	12 (0	6535	2N	169375W		233			181		1968	18				- 4	0060	1 00	20	2 2		ı	Х6	1 7	ΙB			0065
							WA	,		WIND	- IAR		AIR TE	-	-	VIL.	ND.		ICIAL									
							COLDE	TRAN	L OR	00	MET		DET	BUI		ODI	DEPTHS	OBSEI	EVATIONS									
									18	515	12	0	086	07	5	7	10											
	MESSENG TIME HB 1/10	NO.	CAI		(m.)	Ţ,	t	1	•4.	sig	WA-T		COIC VOLL			. M.		DCITA	02 =1/1	10	- 1/1		TAL=P			NO3-N 103-84	\$1 0 a=\$1 pq - a4/1	pH
		+-						+				\vdash		-			1		-	1				_	\dashv		_	
	1	'	s'	000 a	0	۰ ٥	533	่ 33	07	26	13	٠ ₀ ,	01892	3	00	00	14	698	772	i		1			'		•	
	0.0	9	08	5 000	0	0	533	33	068	26	13						140	698	772									
	0.0	9	OB:	5 000	5	0	531	33	069	26	13						14	698	779									
			S	10 001	0	0	524	33	06	26	13	00	01888	7	00	19	14	696	772									
	00	9	08	001	0	0	524	33	061	26	13						14	696	772									
	0.0	9	OB:	5 001	5	0	364	33	054	26	30						14	630	703									
			S	TD 002	0	0	280	33	05	26	37	00	01669	0	00	37	14	594	666									
	0.0	9	OB:	5 002	0	0	280	33	045	26	37						145	594	666									
	0.0	9	08	5 002	5	0	287	33	066	26	38						145	598	664									
			S	rD 003	0	0	289	33	07	26	38	0 (01657	9	00	53	146	600	666									
	00	9	QB:	003	0	0	289	33	070	26	38						14	600	666									
	0.0	9	OB:	003	5	0	287	33	068	26	38						146	600	666									
	00		08		0		289		074	26								602	662									
	0.0	9	OB:	004	5		291	33	076	26								603	662									

MEFER	INCE					Τ,		SOEN		TION	7114				ORIGIN	ATOR	•	$\overline{}$	DEPTH	WAY			WAVE		T wi		CLOUD				1
CTET	10.	COOF	LATITU	01	LONGITUDE	100	sou	ABE	,,,	IGM			rear	COUI		STA TIC		\dashv	10	DEPTH	4		ERVAT		TH	ER	COOES		\$1	100C	
C008	NO.	0001		1/10	1/1		10*	1.	MO	DAY	H2,1	/10		NO		NUM	ER	\perp	BOTTON	S.W.S.	\$ 0	d,	HGT PE	8 31	CO	01	TIPE A WI		N	UMBER	
311	270	Si	6539	N	16944 W		233	59	07	18	01	вh	968	BS	2 06	6		l	0051	00	١,	8	2 2		X	6	7 8			0066	
								WA	1 E R	1	WIN		DAR	$\neg \tau$	AIR TE				NO.	I	CIAL	Ē.		•	,						
								COLOR	18AN		L	OF	MET!	R	ORT BULD	BUL	C	V11.	OBS. DEPTHS	DOSERY		N S									
										17	7 5	23	11	5	071	06	8 6	5	09												
		MESSENG TIME HR 1/11	° NO.	C \$1		(m)	,	٣		s •4.		SIGMA	A T		MALT-1		≨ ∆ 01N. 1 x	. м.		UND	0 2	m L/1	PO 4		101AL		NO2-N vg - al/l	NO3=N #8 = 61/1	\$1 04=\$1 ## + 61/1	эн	5 C
																										1					77
				S	TD 000	0	0	478	33	109		262	1	00	1818	4	000	00	14	676											•
		02	1	OB:				478		088		262	1						14	676											
		02	1	08:				477		9808		262								676											
					TD 001			475		109		262		00	1813	2	001	8		676											
		02		08:				475		1092		262								676											
		02	1	08:				375		111		263								635											
			_		TD 002			294		113		264		00	1615	4	003	55		601											
		0.2		OB:				294		131		264								601											
		0.2	1	08				294		134		264					005			602											
					TD 003			294		113		264		00	1614	4	005	1		603											
		0.2		0 B :				294		1133		264								603											
		0.2		OB:				292		134		264								603											
		0.2	1	08:	5 004	U	0.	291	33	133	5	264	3						14	603											

EFE	ENCE	SHIP				_ :	10 19			ION T			T	ORIGIN	ATO	R"S		DEPTH	MAX.		WAVE	WEA-	Crono	T		NOOC
01		COOL	LATITUO	1/10	LONGITUDE	8 8	10.			GMTI	4R,1/10	YEAR			STATI NUM			10 10110 w	OEPTH OF S'MPL"	0.,	HGT ME SI	CODE	CODES		3	TATION
1	1270	Si	65436	N	16948 W	_	233			18	031	1968	В					0052	00	16	2 2	X 5	7 8			0067
								WA	ER	,	*INO	- BAR	٥.	A P TE	MP.		vis.	NO.	5.05	CIAL						
								COLOR	TRANS.	OIR.	SPEED	M ET		DOLD	¥ ¥U	ET (c	CDDE	OBS. DEPTHS		ATIONS						
									-	18	524	11	0	073	00	56	3	09								
		PESSENCE TIME HR 1/3	CAST NO.	CAR		lm i	,	τ	s	٠/	sigi	√ A − 1		CIFIC VOLU			10°	SOU		0 2 =1/1	PO4=P 94 = 81/1	101AL=P	NO2-N up = of/1	403~N #8 - 61/1	\$1 0 a = \$1	
				ST	0000	0	01	513	330	8 (26	16	0	01865	3	00	00	146	90	834						
		0.3	4	OBS	000	0	0 '	513	330	75	26	16						146	90	834						
		03	4	085	000	5	0	512	330	81	26	16						146	90	836						
				ST	0 001)	0.5	512	330	8	26	17	0	01859	9	00	19	146	91	833						
		0.3	4	OBS	001	0	0	512	330	82	26	17						146	91	833						
		0.3	4	OBS	001	5	0.4	472	330	90	26	22						146	76	809						
				ST	0 002	3	0.	295	33	4	26	43	0	01609	5	0U	36	146	0.2	597						
		0.3	4	OBS	002)	0;	295	331	140	26	4.3						146	02	597						
		0.3	4	OBS	002	5	0;	295	33	142	26	43						146	03	650						
				SI	D 003	0	0.	294	331	14	26	43	0	01607	6	00	52	146	03	652						
		0.3	4	OBS	003	J	0;	294	331	142	26	43						146	0.3	652						
		0.3	4	OBS	003	5	0	292	331	40	26	43						146	J 3	654						
		0.3	,	000	004	٦.		202	2.21	120	2.4	/. 2						1 4. 4		665						

	SNIP	LATITUDE	T	GITUDE E		UARE	STATIO	1 TIME	YEAR		NATOR'S		DEPTH	MAE.		WAVE	wie		UD		NO	DC	
COOL NO.	CODE	1/10	1	1/10 E	10*		MO DA		1		STATION NUMBER	80	01 M0110	S'MPL"		HGT PER S	000				NUA		
311270	sı I	66235N	16	6205W	233	بلههار	07 118	145	1268	1852 06	B MP. T		017	00	23	12 3	x 2	6	8		00	1890	
						COLOR		IL O	1 1	ER DRY	WET	COOR	ND. OBS. EPTHS		CIAL /ATIONS								
							-	0 50			089	8	03										
	MESSENGE TIME & HR 1/10	CAST C	ARD	DEPTH (m)	1	r to	5 */		GMA-T	SPECIFIC VOL		Δ D.	SOU		02 m1/1	PO4-P	101AL=		N ND		0.4-5:	ρН	\$
	HR 1/10	NO. 1	TPE		+		-			ANOMALT-I		103	VELO	CITY		yp = 61/1	#\$ - 61/	1 40 - 0	VI 18.	et/I +	- 01/1		٥
	1	1	5 T D	0000	, 0	689	3064	2	403	003892	6 00	000	147	29	731	1	I	1	ı			- 1	1
	146 146	0 E		0000 0005		689 689	3064	_	403 403				147		731 740								
		5	STD	0010 0010	0	648	3077	2	418 418	003747	1 00	038	147	16	740 740								
	146	08	0.5	0010		7040	3011	0 2	410				14/	10	740								
REFERENCE	SNIP	LATITUDE	1.0	NGITUDE 5	13,	45DEN UARE	STATIO	N TIME	YEAR		NATOR'S		DEPTH	MAX		WAVE SERVATION:	S THE		UD DES		NO	DC	
C787 ID.	CODE	1/10	-	1/10	10.		MD DA			NO.	STATION NUMBER		оттом	S'MPL	l l	HGT PIE	1 000				NU	TION MBER	
311270	sı	6630 N	16	641 W	233	اهها	07 14	162	11968	A 19 T		- le	023	00	15	1 2	l xe	5 5	8		0	069	
						COLDR		IR. SPE		ER DRY	WET		ND, OBS. DEPTHS		ECIAL VATIONS								
						-	-	5 51			083	6	04										
	MISSENGE TIME O	CAST C	/RD	DEPTH (m)		1 %	5 .	. 51	GMA-T	SHEIRIC VOL		A D	sou		D2 ml/	PO4-P	101AL		-N NO		D4-5	рн	3
	HR 1/10		YPE		-			-		ANOMALT		1 103	VELO	CITY		≥g = a1/1	µg - ali	n 29-0	11/1 yg.	- at/1 /	g - a1/l		c
			STO	0000	1	1699	3045	. 2	387	004047	[]1 0:	000	147	ا 30 د			1	ı	1				1
	165	0.8	35	0000	C	0699 0697	3045	0 2	387 387				147	30									
	165	5	STD	0010	C	689	3049	2	391	004008	9 01	040	147	29									
	165 165	08	85 85	0010 0015)689)578	3048	_	391 421				147	_									
								_															
REFERENCE	SHIP		Ι.	-	1 70	RSDEN	STATIO	N_TIME	Ţ <u></u>	ØRIGI	NATOR'S		DEPTH	MAX		WAVE	WE	A- CLO	aus		NC.	onc.	
REFERENCE C1EV ID. C00E NO.	SHIP	LATITUDE 1/10		NGITUDE 🚉	10.	UARE	STATION IG	A TI	YEAR	ORIGI CRUISE NO.	NATOR'S STATION NUMBER		DEPTH TO DITOM	MAX DEPTH OF S'MPL'	08	WAVE SERVATION	607	e CD	DES			DOC TION	
CIET ID.	CODE			GITUDE	201	1°	MO DA 07 18	411 Y HR.171	_	CRUISE NO. BS2 07	STATION NUMBER	8	TO	DEPTH	08	SERVATION:	S THE	E CD	DES		NU		
CIRY ID.	CODE	1/10		1/10 E	10.	1° S 67 COLDE	MO DA	4TI Y HR.171 179 WIND	1968	CRUISE NO. BS2 07 O- AIR TI ER DRY	STATION NUMBER	0 Vis	032 NO. DBS.	DEPTH OF S'MPL'	5 012	SERVATION	S THE	E CD	A MT		NU	AT BER	
CIRY ID.	CODE	1/10	-	1/10 E	10.	JARE 1° 3 67 WAT	MO DA	179 WIND SIR 0	1968	CRUISE NO. BSZ 07 O- AR TI ER DRY all BULB	STATION NUMBER O MP. C WET BULB	VIS COOR	O 3 2 NO. DBS. DEPTHS	DEPTH OF S'MPL'	08: 16	SERVATION	S THE	E CD	A MT		NU	AT BER	
CTEP 10. COOR NO. 311270	SI	. V10	16	712 W	2 3 3	GOLDE	MO DA	179 WIND SIR 50 6 S1	1968 BAR ED MET (mb	CRUISE NO. BS2 07 G- AIR TI ER DRY EI BULB 0 096 SPECIFIC VOL	STATION NUMBER	0 VIS COOR C	032 NO. DBS.	OEPTH OF S'MPL' OO SPE OBSER	1 08 15 012 16 CCIAL VATIONS	SERVATION	S THE COL	E CD	DES AMT	1-8 SI	01	0701	į
C187 ID. C008 NO. 311270	CODE	6633 N	16	1/10 E	2 3 3	1° S 67 COLDE	MO DA	179 WIND SIR 50 6 S1	1968	CRUISE NO. BS2 07 O- AIR TI ER DRY 11 BULS 0 096	STATION NUMBER	VIS COOR	032 NO. DBS. DEPTHS	OF STMPL	08: 16	SERVATION	S THE	P NO2	B NO		NU	0701	000
CTEP 10. COOR NO. 311270	S I	1/10 6633 N	16	712 W	2 3 3	WAT COLDR CODE	(G) DA 07 18 ER TEANS (Y HR,171 179 WIND DIR. 0 0 0 151 6 S1	1968 BASED MET (mb	CRUISE NO. B S 2 0 7 O- AIR TI ER DRY BILB O 096 SPECIFIC VOL ANOMALT-1	STATION NUMBER	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NO. DBS. DEPTHS	OP STE	OS OR I OR I OR I OR I OR I OR I OR I OR	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	000
CTEP 10. COOR NO. 311270	SI MESSENGE TIME 6 HR 1/10	CAST C T	16	712 W	233	1 67 WAT COLDR CODE	1GI MO DA 07 16 FER TRANS (100) 11 5 -/	WIND 6 S1 2 5 2	1968 BABID MET Cot (mb	CRUISE NO. BS2 07 G- AIR TI ER DRY EI BULB 0 096 SPECIFIC VOL	STATION NUMBER	0 VIS COOR C	10 DETOM 10 3 2 10 DBS. DEPTHS 06 SDU VELD	OPTHOSE STAPL	08: 16 CIAL VATIONS 703 703	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	1000
C187 ID. C008 NO. 311270	SI MESSENGE TIME OF T	CAST C T OE	ARD YPE	0000 0005 0010	2 3 3	11 13 67 14 15 16 17 17 16 17	100 DA 07 18 ER 1 14ANS 0 3046 3045 3045 3045	MTI Y MR, 1/1 179 WIND DIR, SPE OOIR OOIR 5 5 2 2 2 2	1968 1968 100 Met 101 Met 102 Met 103 Met 104 Met 105 Met 105 Met 106 Met 107 Met 108 Met	CRUISE NO. B S 2 0 7 O- AIR TI ER DRY BILB O 096 SPECIFIC VOL ANOMALT-1	STATION NUMBER O MP. C WET BULB O 86 O 86	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	032 NO. DBS. DEPTHS 06 SDU VELD 147 147 147	OPTHONE STAPL	08 08 16 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	[400]
C187 ID. C008 NO. 311270	SI MESSENGE 10ME 0 179 179 179	CAST C T S O E O E O E O E O E	ARD YPE	0000 0000 0000 0000 0000 0000 0000 0000	2 3 3	0736 0736 0736 0736 0736	1G/MO DA 07 1ER 18ANS 1 1	MTI Y MR, 1/1 179 WIND DIR, SPE OOIR OOIR 5 5 2 2 2 2 3 2	1968 1968 20 Mari 20 14 382 382 382 382 386 386	CRUISE NO. BS2 07 O- AIP TI ER DAY I BULE 0 096 SPECIFIC VOL ANOMALT-1	STATION NUMBER O MP. C WET BULB O 86 O 86	VIS COOR D	032 NO. DBS. DBS. DEPTHS 06 SDU VELD 147 147 147	00 SPE 00 SPE 00 CHTY	08 16 16 CCIAL VATIONS 703 703 702 702 702	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	1000
C187 ID. C008 NO. 311270	MESSENGE 11ME 6 HR 1/10	CAST C C C C C C C C C C C C C C C C C C C	16 ARD YPE STD 3S STD 3S STD 3S STD	0000 0000 0000 0010 0010 0010 0010 001	233	0736 0736 0736 0736 0736 0736 0738	3046 3045 3045 3045 3045 3045 3045 3045 3050 3062 3076	ATI Y MR.1/1 179 WIND DIR. 511 6 S1 . 51 2 2 2 2 2 2 3 2 5 2 2	1968 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	CRUISE NO. BS2 07 O- AIP TI ER DAY I BULE 0 096 SPECIFIC VOL ANOMALT-1	STATION NUMBER O	VIS COOR D	032 NO. DBS. DEPTHS 06 SDU VELD 147 147 147 147	SPECTOR ND CONTY 145 145 145 145 145 145 145 145 145 145	703 703 703 703 702 702 702 702 698	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	100
C187 ID. C008 NO. 311270	SI MESSENGE 10ME 0 179 179 179	CAST C CAST C C CAST C C CAST C C C C C C C C C C C C C C C C C C C	16 ARD YPE STD 3S STD 3S STD 3S STD 3S	0000 0000 0005 0010 0015	2 3 3	3 67 WAT COLOR CODE 1 1 C	3046 3045 3045 3045 3050 3062	ATI Y MR.1/1 179 WIND DIR. 511 6 S1 . 51 2 2 2 2 2 2 3 2 5 2 2	1968 1968 8A1 10 Met 10 Me	CRUISE NO. B \$2 0 0 0 0 A AIR 10 0 0 96 SPECIAL VALUE AND MALT—1 00 40 85	STATION NUMBER O	000 000 000 000	10 0 3 2 NO. DBS. DEETHS 06 SDU VELD 147 147 147 147 147 147	SPECTOR ND CONTY 145 145 145 145 145 145 145 145 145 145	03 02 mi// 703 703 702 702 702 702 702	SERVATION	S THE COS	P NO2	B NO		O1-5:	0701	
C187 ID. C008 NO. 311270	SI MESSENGE 11ME 6 HR 1/10 179 179 179 179 179	CAST C CAST C C CAST C C C C C C C C C C C C C C C C C C C	16 ARD YPE STD 3S STD 3S STD 3S STD 3S	0000 0000 0000 0000 0001 0015 0020 0025	CC 00 00 00 00 00 00 00 00 00 00 00 00 0	0736 0736 0736 0736 0736 0736 0738 0738 0731	3046 3045 3045 3045 3045 3045 3075 3075	Y HR, 1/1 179 WIND DIR. 900 6 S1 . 51 2 2 2 2 2 3 2 2 7 2	1968 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	CRUISE NO	STATION NUMBER O	8 8 8 8 10 10 10 10 10	100 DITOM 032 NO. DEST. 0085. 0085. 5000 VELD 147 147 147 147	OEPT O O O O O O O O O O O O O O O O O O O	7 03 703 702 702 702 702 698 698	FO P	S THE COOK	P NO2-11	DES AMT 8		01	070 pH	
311270	MESSINGS TOME 6 HR 1/10	CAST C T C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	0000 0000 0005 0010 0015 0020 0020 0025	2 3 3 3 5 CC CC CC CC CC CC CC CC CC CC CC CC C	0736 0736 0736 0736 0736 0736 0736 0738 0731 0731	3046 3046 3045 3046 3045 3075	Y MR.171 179 WIND	1968 1968 10 BAIL 10 Maria 10	CRUISE NO	STATION NUMBER O	8 8 8 8 8 8 8 8 8 8	032 NO. DBS. DEPTHS 06 SDU VELD 147 147 147 147	DEPTH OF OF OF OF OF OF OF O	703 703 703 702 702 702 702 702 702	WAVE	S THE COOK	NO2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	B NOUV PG		01 01 01 01 01 01 01	0701	1000
TEFERENCE CON ID. STATEMENTS TEFERENCE CON ID. COOL NO.	SI MESSINGS TIME 6 H8 1/10 179 179 179 179 179 179 CDDE	CAST C T C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	NGITUDE	2 3 3 3 5 10 5 10 5 10 5 10 5 10 5 10 5 1	0736 0736 0736 0736 0736 0736 0738 0738 0731 0731	GG GG GG GG GG GG GG G	Y HR.1/1 17.9	1968 1968 10 BAI 10 Mari 10	CRUISE NO. A 19 TI SUE SUE NO. A 19 TI SUE SUE NO. A NO MAIT - I NO. A NO MAIT - I NO. A NO MAIT - I NO. STATION NUMBER WET RULE WET RULE STATION NATOR'S STATION NUMBER	8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	032 NO. DES. DES. DES. DES. DES. DES. DES. DES	OEFT OF STAPE	703 702 702 702 702 5698 698	FO4-P	S THE COOK	NO2 : 101 NO2 :	B NO NO NO NO NO NO NO NO NO NO NO NO NO		010 01-51 NU1-51	0701 pH	<u> </u>	
STREEFICE	SI MESSINGS TIME 6 H8 1/10 179 179 179 179 179 179 CDDE	CAST C T C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	0000 0000 0005 0010 0015 0020 0020 0025	2 3 3 3 5 CC CC CC CC CC CC CC CC CC CC CC CC C	UARE 17 17 17 17 17 17 17 17 17 17 17 17 17	G G G G G G G G G G	### ### #### #########################	1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CRUISE NO. AND ALT 1 1 1 1 1 1 1 1 1	STATION NUMBER	8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	032 NO. DOSS. NO. DOSS. SOU VELD 147 147 147 147 147 147 147 147 1029	DEPTH OF STAFF	03 03 02 02 03 03 03 03 03 03 03 03 03 03 03 03 03	WAVE	S THE COOK X 6	NO2 : 101 NO2 :	B NO NO NO NO NO NO NO NO NO NO NO NO NO		010 01-51 NU1-51	pH pH pH	100
TEFERENCE CON ID. STATEMENTS TEFERENCE CON ID. COOL NO.	SI MESSINGS TIME 6 H8 1/10 179 179 179 179 179 179 CDDE	CAST C T C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	Notice	2 3 3 3 5 10 5 10 5 10 5 10 5 10 5 10 5 1	UARE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GG GG GG GG GG GG GG G	MT1 Y MR.1/1/1 179 WIND DIR. STE 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1968	CRUISE NO. R S 2 O 7 O - A 18 TI O 0 40 B S 2 O 7 O - A 18 TI O 0 3 B 5 S O 0 3 B 5 S O 0 - A 18 TI O 0 - O - A 18 TI O 0 - O -	STATION NUMBER	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	10 10 10 10 10 10 10 10 10 10 10 10 10 1	DEPTH OF STAFF	03 m//i 16 02 m//i 703 702 702 702 702 698 698	WAVE	S THE COOK X 6	NO2 : 101 NO2 :	B NO NO NO NO NO NO NO NO NO NO NO NO NO		010 01-51 NU1-51	pH pH pH		
311270 effetence cirr ib. 311270	SI	CAST C NO	16 16 16 16 16 16 16 16 16 16 16 16 16 1	OLEPTH (m) OLEPTH	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	UARE WATER TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TOT	G G G G G G G G G G	V MR, 1/1 V MR, 1/1 WINDO	1968 AAA 1 1968 AAA 1	CRUISE NO. R S 2 O 7 O - A 18 TI O 0 40 B S 2 O 7 O - A 18 TI O 0 40 B S 2 O 0 40 B S 5 O 0 5	STATION NUMBER	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	100 32 NO. 035. NO. 035. 147 147 147 147 147 147 147 100110M	DEPTH OPER	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE	S THE COLL ACCOUNTS THE THE THE THE THE THE THE THE THE THE	NO2 1111 111	B NODES	a1/1 v	00 O O O O O O O O O O O O O O O O O O	pH pH pH	
311270 effetence cirr ib. 311270	SI MESSINGS TIME 6 H8 1/10 179 179 179 179 179 179 CDDE	CAST C NO	16 16 16 16 16 16 16 16 16 16 16 16 16 1	Notice	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	UARE WATER TO THE TO THE TENT OF THE TENT	GG GG GG GG GG GG GG G	V MR, 1/1 V MR, 1/1 WINDO	1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1 1968 AAA 1 1968	CRUISE NO. R S 2 O 7 O - A 18 TI O 0 40 B S 2 O 7 O - A 18 TI O 0 3 B 5 S O 0 3 B 5 S O 0 - A 18 TI O 0 - O - A 18 TI O 0 - O -	STATION NUMBER	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	10 10 10 10 10 10 10 10 10 10 10 10 10 1	DEPTH OF STANFILL	03 03 02 02 03 03 03 03 03 03 03 03 03 03 03 03 03	WAVE	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	NO2 1111 111	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	00 O O O O O O O O O O O O O O O O O O	pH pH pH	900
311270 effetence cirr ib. 311270	SI	CAST C C C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	DEPTH (m)	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0736 0736 0736 0736 0736 0736 0738 0731 0738 0731 0738 0731 0731 0731 0731 0731 0731	NO O D NO O NO O O O O O O	V MR.1/1 V	1968 ALL OF THE PROPERTY OF TH	CRUSE NO. A 19 TI SUB S 2 O 3	STATION NUMBER	8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TO DITIOM O 32 NO. 085. 147 147 147 147 147 147 147 147 150 NO. 085. 085. 085. 085. 085. 085. 085. 085	DEPTH O SPEEN ND CITY COSER ND CITY	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE PO4-P PO4-P PO4-P	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	NU: 01-5: NU: 01	pH pH pH pH pH pH pH pH pH pH pH pH pH p	[500]
311270 effetence cirr ib. 311270	SI	CAST C T C C C C C C C C C C C C C C C C C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	OLEPTH (m) OLEPTH	CC 00 00 00 00 00 00 00 00 00 00 00 00 0	UARE WATER TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TOT	G G G G G G G G G G	### ### ### ### ### ### ### ### #### ####	1968 AAA 1 1968 AAA 1	CRUSE NO. A 19 TI 6	STATION NUMBER	S S C C C C C C C C	100 100 100 100 100 100 100 100 100 100	DEPTHOSE STAFF OF STA	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE PO4-P PO4-P PO4-P	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	NU: 01-5: NU: 01	pH pH pH pH pH pH pH pH pH pH pH pH pH p	900
311270 effetence cirr ib. 311270	SI	CAST C NO. T C NO. T C	16 16 16 16 16 16 16 16 16 16 16 16 16 1	DEPTH (m)	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	UARE 17 10 15 15 16 7 17 16 17 16 17 16 17 16 17 16 17 16 17 17 17 16 17 17 17 17 17 17 17 17 17 17 17 17 17	3046 300 300 300 300 300 300 300 300 300 30	V MR.1/1 V	1968 ALL OF THE PROPERTY OF TH	CRUSE NO. A 19 TI 6	STATION NUMBER STAT	S S COOR TO DITIOM O 32 PAGE 147 147 147 147 147 147 147 147 147 147	DEPTH OF STARPLY O ST	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE PO4-P PO4-P PO4-P	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	NU: 01-5: NU: 01	pH pH pH pH pH pH pH pH pH pH pH pH pH p	[wow]	
311270 effetence cirr ib. 311270	SI	CAST C NO. 1710 CAST C NO. 1710 C	ARD 16	DEPTH (m)	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	UARE 1736 1736 1736 1736 1736 1738 1731 1731 1731 1731 1731 1731 1731	30465 3050 3050 3050 3205 3205 3205 3205 320	Y	1968 10 Material 1968 2 14 GMA-1 3882 3882 3886 3886 407 407 1968 16 16 16 16 16 16 16 16 16 16 16 16 16	CRUSE NO. A 19 TI SUB S 2 O 3	STATION NUMBER STAT	8 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 100 100 100 100 100 100 100 100 100	DEPTH OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF! QO SPERVICE OF STAFF!	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE PO4-P PO4-P PO4-P	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	NU: 01-5: NU: 01	pH pH pH pH pH pH pH pH pH pH pH pH pH p	100 J
311270 effetence cirr ib. 311270	SI	CAST C NO. T	16 16 16 16 16 16 16 16 16 16 16 16 16 1	DEPTH (m)	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	UARE WATER TO THE COLOR COOK T	1	V MR.1/1 V MR.1/2 WINDO WI	1968 AAAA 1 1968 A	CRUSE NO. A 19 TI 6	STATION NUMBER	S S COOR 100 110 M O O O O O O O O O O O O O O O O O O	DEPTH OF STAPP! Q Q SPEN OBSERV NO CITY 745 745 745 745 745 747 751 772 772 772 772 772 772 77	03 03 04 16 02 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 16 04 04 16 04 04 16 04 04 04 16 04 04 04 04 04 04 04 04 04 04 04 04	WAVE PO4-P PO4-P PO4-P	total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- total- vg - 41- vg - 41- total- vg - 41	CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2 CDD NO2 CDD NO2 CDD NO2 NO2 CDD NO2	015 8 NO NO NO NO NO NO NO NO NO NO NO NO NO	al/1 v	NU: 01-5: NU: 01	pH pH pH pH pH pH pH pH pH pH pH pH pH p	- 100m	

REFERENCE	SHIP					\$QU	SOEN		ION T	IME			ONGIN				PTH	MAX.		WAV		WE		0005		١.	HOOC	1
187 ID.	CODE	LATITU		LONGITUDE	20		1				YEAR	CRU		OITATIO			104	OF						I Aw	1		LIMBER	
008 NO.			1/10	1/10	1	10.	12	MOI	DAY	R.1/10			· · · · ·	·UMI	-	1	-	S'MPL"S	Die.	HCT	10 16	-	111	1 140	4			4.
31127	ايداه	6635	744	167541w		233	67	07	1 a L	205	1968	las	o 107	2		00	26	.00	1	1 1	1 2	2 x2	2 6	واخ		- 1	0072	ا
31127	J. J.	0033	, 11	101241			WA	ER.	1	VIND	- IAI	1	AIR TE	Mr. TO			0.		IAL									
							COLOR		DIR.	19110	ME1	ta	ORY	WE		nd V	85. THS	OBSERV										
							CODE	(m)	-	1010	e (m)	181	BULB	BUL	- -	011	1773											
									14	\$16	13	2	086	08	0 7	0	4											
	MISSING		CAR					1				INC	INC VOLU	w.	≨ ∆ (D	sou	NO		PO	4-7	10141-	, NO) 2 = N	NO3-N	51.04-51		
	TIME !	맺 NO.	179		(m)	,	€	,	٠/	SIG	MA-T		DMALT-1		OYN.		VELO		02 m1/1		41/1	# E - 61		e1/1	y2 - 01/1			
	HR 1/10	 	· —			-		+		+		+-		_		_		-		+			+		 	_	 	_
	!	1		1		1		1				١	- -	_		_				-	- 1		1		I	i	1	
			ST	0 000	0		642	32		-	23	0.0	12743	8	000	0	147		721									
	20	6	085	000	0	0	642	32	99	25	23						147	29	721									
	20	6	085	000	5	0	638	32	121	25	26						147	29	728									
		-	ST				627	32	21	25	34	0.0	2640	9	002	7	147	26	735									
	20	6	085				627	32	214	25	34						147	26	735									
	20		085				608	3.2	281	25	4.2						147	21	741									

REFERENCE CTRT 10.	SHIP	LATITUDE		ONGITUDE	100	sou	SDEN ARE		TION IGM	TIME	١,	YEAR	COUISE	RIGINA	TOR'S ATION		DEPT	" 0	MAX DEPTH OF	085	WAVI		WEA	1 00	000		- 9	HODC TATION
CODE NO.	CODE	1/	10	1/10		10*	T 1*	MOI	DAY	HP, 1/	10		NO.		UMBER	-	80110	M 5	MPL'S	DIR.	HGT	31	_ C00	1199	A 44.7			UMBER
- 	51	6636 N	1	6821 W		233				220		968	BS2				003	4	۵۵	_16.	0 2		Х4	7	8			0073
			_				WAT	_	+-	WIND		BARG)- A	III TEM		VII.	NO.		SPEC	IA L								
							COLOR	TEANS	Ou	L (110 01 1101	METE		JET JEB	WET BULE	cobe	OBS.	15 0	BSERVA									
									14	, s	16	12	8 0	94	088	6	06				_							,
	MESSENG TIME HR 1/1	9 NO.	TYPE	DEPTH	(m t	,	₹	5	٠4.		SIGM	A-1	SPECIFIC	VOLU-	, D	A D		GUN		02 m1/1		4-7 41/L	101AL-		2=N 01/1	HO3=N +g + et/1	\$1 Oa=\$ pg = 01/	
			STD	000	0	0	509	32	5.8		257	7	002	2327	,	000	1	468	3.2						١			1
	22	2 0	BS	000			509		580		257							466										
	22		85	000			508		580		57							468										
			STO	001			504	32			257		002	2238	0	022	1	468	91									
	22	2 0	85	001			504		586		257						1	468	3 1									
	22		BS	001			506		591		257						1	468	8.3									
	-		STD	002	0	0	508	32	61	7	258	0	002	2109	0	044	1	468	95									
	22	2 0	BS	002	0	0	508	32	610) 2	258	0					1	468	35									
	22		BS	002	5	0	502	32	616	5 2	258	1					1	468	3 3									

EVERENCE	SHIP	LATITUE	,.	LONGITUDE	20	SQUARE		ON TI		YEAR	ORIGIN		_	DEPTH	MAI, DEPTH		WAVE EVATIONS	WEA-	CLOUD			ATION
10. 10. NO.	COOF		1/10	1/10			MOID					TATION NUMBE		POTTOM	2.msf.		HG [#] #1€ [†] 18					2 M B E 3
11270	51	66355	N	16848 W	1	33 68	07 1	8 2	39 1	968	852 07	4	- 1	0051	00	18	2 2	4.2	6 6			0074
						WA	En	W	IND	BARG	AIR TE	MP C		NO.		CIAL						
						COLOR	TRANS.	OR.	SMIED OF	METE	R DRY	WET	CODE	OSS. DEPTHS	ORSERV							
								17	518	120	5 075	067	7	09								
	MESSING T ME HE 1/10	ON TO	CARD		m i	r tc	5	٠/	SIGM	A-1	SPECIFIC VOLU ANOMALT—BI	5	E ∆ D 51N. M x 103		OCITY	O2 m1/1	PO4=P	f0fAL=f #\$ - #* 1	NO2-N vq - et/1	NO3-4	\$1 04 ~\$ #8 = 01/1	рн
									1						!							
			ST			0357	328		261		001916	3 (0000		621	778						
	24	-	085			0357	328		261						621	778						
	24	0	085			0354	328		261						620	781						
			ST			0356	328		261		001912	9 (019		622	786						
	24	0	085	-		0356	328		261						622	786						
	24	0	085			0359	325		261						624	775						
			51			0359	328		261		001313	9 (0038		625	776						
	24		085			0359	328		261						625	776						
	24	0	085	002	5	03 € 3	328	14	261						628	771						
			ST	0 003)	0364	328		261		001913	8 (057		629	770						
	24	0	085			0364	328		261	1					629	770						
	24	0	085	003	5	0364	328	:11	261	1				14	629	766						
	24	,	OBS	004)	0364	328	123	261	1				14	631	765						

REFERENCE					9 250th	STATION TIP		_	ORIGIN	ATOR'S		DEPTH	MAK	Ţ;	WAVE	NIA:	Cronp	-		opc
CTET IC.	CODE	LATITU	ı	NGITUDE TO THE	SQUARE	IGMTI MO I DAY HE	TEA	CRUI	SE	STATION NUMBER		TO OTTOM	OEPTH OF S'MPL"	0858	HGT PSE SI	THES	CODES		514	ATION M BER
+			1/10						2 07		T	0055	00	1	2 2	X 4	7 6	1		075
311270	1511	6632	5N 10	911 W	233 [69]		IND	10-	A IR TE		VII	NO.		DIAL	2 12 1	1 03	. , ,		, 0	10 1 2
					COLOR	TRANS. DIR.		ETER nbs)	D#4	WET	coo	OBS. DEPTHS	OBSERV	ATIONS						
						18		\rightarrow	071	068	6	10								
	wESSINGS TIME	CAST	CARD		7 %	5 -4.		SPIC	FIC YOU	, we S	ν	50	UNO	014	PO4-P	10141-9	NO2-N	NO3-N	5104-54	
	HR 1/10	NO.	TYPE	DEPTH (m)		,	SIGMA-T	ANO) ₩ A L 1 - 8	18'	1 10 ³	VEL	DCITY	02 m1/1	#g * 61/1	ag = a1/5	µa + 8€/1	yg = a1/1	μg = et/1	pΗ
			STO	0000	0506	3304	2614	0.0	1883	3 0	000	-	687							
	018		085 085	0000 0005	0506 0495	33041 33051	2614 2616						687 683							
	010	,	510	0010	0486	3306	2618	00	1848	7 0	019		680							
	018		085	0010	0486	33060 33061	2618						680 678							
	018	5	OBS STD	0015 0020	0480 0476	33061	2618 2619	00	1840	7 0	037		678							
	018	3	OBS	0020	0476	33058	2619						678							
	018	3	085	0025	0396 0377	33060 3306	2627 2629	00	1742	5 0	055		645 638							
	018		STD 085	0030 0030	0377	33060	2629	00	1/42	, 0	0))		638							
	018		085	0035	0373	33060	2629						637							
	018		085	0040	0374	33060 33064	2629						638 639							
	018	1	OBS	0045	0375	33064	2630					14	0 3 9							
REFERENCE					· SDEN	STATION TH			ONG	NATOR'S			MAK.		WAVE	₩ EA-	CLOUD	-		005
C787 1D.	SHIP	LATITU	OE 10	NGITUDE TO	SOUARE	(GMT)	YEA	CAO	ISE	STATION		10 10 80110A	DEPTH	OBS	ERVATIONS	THEF	CODES		51	ODC ATION IMBER
CODE NO.			1/10	17/10 ° Z	10. 1.	H YAO OM	1,1/10	NO.	0.	NUMBER	_		S'MPL"		NGT PER SE	-	1177	1		
311270	ايدا	6627	5N 16	.9335WII	233 69	واعداتم	38 196		2 07	MP. T	_	<u> 0058</u>	1 00	16	2 2	X 2	7 8		(076
					COLOR	TRANS DIR	SPEED M	ARO-	DRY	WET	VIS	NO. 085.	A SCEEN	CIAL						
					cont	(m) UIL	FORCE	mbal	BULL	BULB	+	DEPTHS	-							
						16	525 1	20 1	073	067		10	1	1						
	MESSENGI TIME	% NO.	CARD	OEPTH (m)	1.0	5 %.	SIGMA-		IFIC VOL	UMF 6	A 103	A. VEL	OCITY	02 m1/1	PO4-P vg - at/t	1014L-P	ND3-N	NO3-4	\$1 O ₄ =\$1 yg = at/1	pН
	HR 1/10	<u> </u>								-	. 10		-		-		-			
	l	Į	STO	0000	0552	3289	2597	ı	2046	. 1 0	000	1 14	703	841			I	l	1	
	040)	OBS	0000	0552	32891	2597						703	841						
	040		OBS	0005	0549	32896	2598	•			019		703	841 728						
	040	1	STD OBS	0010 0010	0415 0415	3298 32979	2619 2619	00	1838	5 I U	019		649	728						
	040		085	0015	0352	33068	2632						625	694						
			STD	0020	0351	3307	2632	00	1709	9 0	037		625 625	697 697						
	040	-	OBS OBS	0020 0025	0351 0352	33071 33069	2632 2632						626	689						
	0 4 (STD	0030	0352	3307	2632	00	1715	2 0	054		627	694						
	0.40		085	0030 0035	0352 0348	33066 33069	2632 2632						627	694 687						
	040		085 085	0039	0350	33076	2633					_	628	694						
	040		OBS	0044	0350	33069	2632					1 4	629	689						
														,						
REFERENCE CIET ID.	SHIP	LATITU	DE LO	NGITUDE 100	SOUARE	STATION TO	ME YEA	R CRU		NATOR'S		DEPTH	DEPT:	085	WAVE SERVATIONS	WEA	CODE			DOOR
CODE NO.	CODE	•	1/10	. 07	10. 1.	H YAC OM	e _1/10	N		NUMBER		BOTTO	4 5'A PL	S DIP	HGT PER S	COD	1+31 4-4	1	**	UMBEP
311270	1 51	6534	N 16	809 W	233 58		15 196	8 8	2 0			0038	100	16	2 2 1		7 8		1 (0077
					COLOR			ARO-	AIR T	EMP. TO	- VIS	NO. 085.	SPI	ECIAL VATIONS						
					CODE	IMI DIR.		(mbs1	BULB	BULB		DEPTH	2 OBSEK	VAIIONS						
						16	521	140	073	070	1 7	07				,		,	,	
	MESSENG TIME HR 1/10	CAST	CARD	DEPTH (m)	1 10	5 1/4.	SIGMA-		DMALT-	UM, I	E A C	Q. 50	DND	02 ml/l	PO 4-P		ND ₂ =h			p∺
	HR 1/10	T NO.	TYPE		-						x 10 ³	VE	FOCIEA		µg • 01/1	28 - 6171	≥g - at	µg − a1	-g - 0f I	
							1	1												
			STD	0000	0723 0723	3016 30164	2361 2361	00	1429	J7 C	1000		736							
	11		08S 08S	0004	0723	30162	2361						737							
	11		OBS	0009	0722	30163	2361	_					737							
			STD	0010	0722 0722	30160 30160	2361	0.0	1429	20 C)Ü4.		738 738							
	11		0BS 0BS	0013 0017	0722								738							
			STD	0020	0720	3017	2362	00	0428	63 C	008		738							
	11		085 085	0022 0026		30166 30178	2362						739							
	11	2	002	0020	0119	20110	2000						. , . ,							

TET IO.	COOE	LATITU	OE 1/10	LONGITUOE	30				TION IGMT	1)	7	EAR	CRUI		ATOR'	N		OEPTH TO FOTTOM	٥	MAX. EPTH OF MPL'S	OI	ISER\	A VE VA TIO	WEA THE		CLOUD COOKS	1		NOOR STATIO)N
311270	sı	6535	N	16819		233	58	07	19	12.	8 1	968	85	2 07	8			0048		00	18	12	2	X 2	2	7 8			007	78
311270	,, 51, 1	0 0 3 0		1001	• •	, , ,	WA			WIN		BARC		AIR TE			VIS.	NO.	Γ	SPEC	TAI	7								
							COLOR	TEAN		L i	OFCE OF DEED	METE	•	DRY	W E	1 c	004	OBS. OEPTHS	0		A TION S	5								
									18	s	23	14:	3	071	06	6	5	09												
	MESSENG TIME HE 1/10	NO.	CAR		t m J	,	٣		s •4.		SIGMA	4- 7		MALT-ET		₹ Д 01N	ιм.		000		02 ml/		PO4-	101AL-		NO3-N ve - 4t/1	NO3=N up = at/1			pΝ
																		1		- 1		- 1			Ì			ļ	1	
			51	00 di	00	0	599		0.7		252		00	2717	2	00	00		71											
	13	1	089	5 00	0	0	599		067		252								71											
	13	1	085	00)5		595		094		252								71											
	13	1	083	5 00	9	0	597		110		253								71											
			S1				598		211		253		00	2682	0	00	27		71											
	13	1	QB3				599		120		253								71											
	13	1	083				607		136		253				_		_		71											
			51	rD 00.	20	0	612		14		253		00	2679	7	00	54		72											
	13	1	083	5 00	23		616		2150		253								72											
	13	1	089	5 00	2 7	0	615		155		253								72											
			S1	00 da	30	0	612		16		253		00	2668	1	00	81		72											
	13	1	089	5 00	32	0	611		2158		253								72											
	13	1	083	5 00	36	0	611	32	2153	3	253	2						14	72	23										

	5HIP COOE	LATITU	OE 1/10	LONGITUOE	NOC 18	A RECE		ATION		YEAR	ORIGII CRUISE NO.	OTAN TATZ NUN	ION		0891H 10 10110M	DEPT- OF S'MPL'		SERVA!	TIONS	THER	CLOUD		57	ATION UMBER
311270	51	6535	N	16826 W			8 07		142 WINO		BS2 07				056	00	16	2 5	5	Х4	7 - 8			0079
							LOR TEA	N1 01	SPEE OR	MET	ER DRY		JLB	CODE	OBS. DEPTHS	OBSERV	ATIONS							
								17	520	14	5 064	0	61	6	10							,	,	
- 1	MESSINGE TIME (MR 1/10	CAST NO.	CAR TYP		(m (τ 10		s ¼.	sic	MA-1	SPECIFIC VOL			Δ O. 103		0 N O	0 ; ml/		. 9111	101AL=F	NO2-N ug - 61/	NO3=N yg - at/f	\$1 O4=\$1 ug + at/1	PH
ſ															1			1	-					
			ST			048	_	268		87	002139	52	00	00	_	674								
	145		089			048		2679		87						674								
	145		OBS			047		2670		88						670								
			51			046	-	266		89	002122	26	00	21		664								
	145		085			046		2660		89						664								
	145		OBS			043	-	2640		90						654								
			51	002	0	041		263	_	91	002107	70	00	42		648								
	145		085	002	0	041		2628		91					-	648								
	145		085			041		2619		91						645								
			51			040		262		91	002104	43	00	63	-	644								
	145		085			040		2616		91						644								
	145		083	-		039	_	260		91						641								
	145		083			040		2616		91						646								
	145		083	5 004	4	040	8 3	2612	2 2 !	590					14	647								

532. AA



